# Municipal Journal

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NEW LIGHTS ON PENNSYLVANIA AVENUE—MUNICIPAL BUILDING IN FOREGROUND.

## NEW STREET LIGHTS IN WASHINGTON

**Luminous Arc Lamps for Business Street Illumination, with Special Modifications—Novel Segment Glass Globes —Posts of Special Design and Construction Details—Cables—Street Name Signs.**

For several years past, District Electrical Engineer Walter C. Allen has been developing for Washington, D. C., a system, or rather two systems, of improved street lighting. Certain of his experiments along this line have been noted by us from time to time. About three years ago a system of improved lighting with incandescent electric lamps was adopted and more than 1,600 have been installed. Most of these lights carry 100-watt 100-candle power Mazda lamps. These are carried by posts which have a long, slender, tapering shaft, on which is an Alba globe 14 inches in diameter. The lamps are placed at opposite curbs alternately 60 feet apart along the street, or 120 feet apart measured on one curb. On some of the important streets the posts are placed opposite each other at intervals of 75 to 100 feet. The cost to the municipality of the incandescent lamps, including maintenance, is $27.50 per annum.

More intense illumination, however, was considered desirable in the business section and that part of Pennsylvania Avenue connecting the legislative and executive buildings, and for these locations the second system was developed. This is an ornamental arc lamp, the first installation of which was put in service on January 30 of this year to illuminate 6,350 feet of Pennsylvania Avenue, from the capitol to Fifteenth Street. This system has been made to harmonize in appearance with the improved incandescent, by both day and night, by the use of similar standards, the bases being proportioned exactly alike for both kinds of lamps, although the shaft of the arc light is required by the construction of the lamp to be wider at the top than is the incandescent post.

The new standards are 15 feet high from the base to the middle of the globe. They show a tapering fluted shaft set in a round base, surmounted by a large glass globe. They were designed by the architectural firm of Hornblower & Marshall, of Washington, and all of these, as well as a large proportion of the incandescent standards, were made by the Union Foundry Company, of Anniston, Ala. An unusual feature of these posts is the casting of the shaft and base separately and with a locking device which has been patented by the manufacturers. In setting the standard a block of concrete is first laid in the sidewalk and anchor bolts placed in it at the proper positions to hold the base. When the base is securely set, the wires in a lead covered cable are passed through the shaft, which is then raised, set in the base and firmly locked in place by a single turn of the shaft.

This Union locking device does away with all unsightly bolt heads on the top of the base, such as were used in the old style of connecting, in addition saving time and adding to convenience in erecting. In this installation the lead covered cables are carried to the lamp terminal without breaking the lead covering.

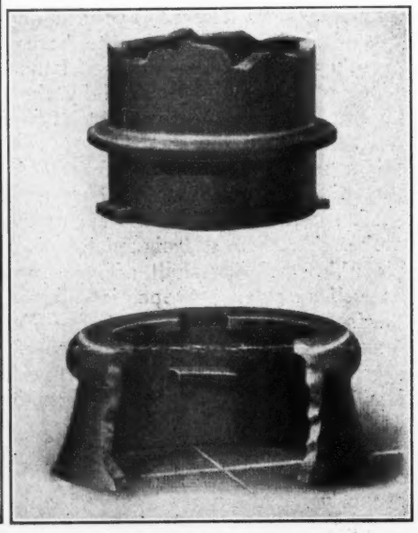
The lamps are the standard 6.6 ampere luminous arc of the General Electric Company, but equipped with special parts to adapt it to use in the new style of installation. The lamp mechanism is so adjusted that the shadow of the slide rod falls on one of the ribs which enclose the globe, and no shadow appears. The lamp is the product of C. A. B. Halvorson, designing engineer of the General Electric Company.

The globe is in shape a sphere slightly elongated, about 23 inches in diameter, of glass known as "polycase alabaster," designed especially for luminous arc lamps and made by the Gleason-Tiebout Glass Company of Brooklyn, N. Y. Instead of moulding or blowing it as a whole, it is made in 12 segments which are set in an aluminum ribbed frame, the inner surfaces of the ribs being lined with felt, and the glass segments being held in place against them by equalizing spring fasteners. Two densities of glass are used, "medium" in the upper half and "light" in the lower half.

The cable for this installation is single conductor No. 8 B. & S. gauge copper, insulated with 8-32-inch varnished cambric and protected by a 1-8-inch lead sheath. Conduits were laid years ago in the roadway within three feet of each curb, and these are used for the cables. Two circuits are used, with the lamps on each side of the street connected alternately to them.

Pennsylvania Avenue is 109 feet wide between curbs, and there are some trees on the sidewalk near the curb line. Consequently, it will readily be seen that the difficulties of lighting are unusual. The lamps are set at intervals of 100 feet on each side of the street, the lamps on opposite sides being staggered. (In carrying out this general scheme, of course, a good many variations in details had to be made.) The lamps are in two circuits, controlled at the power station of the Potomac Electric Light & Power Company, so that alternate lights may be shut off at midnight. The number of these set so far is 123, which illuminate 692,804 sq. ft. of roadway, giving 0.0923 watts per square foot.

NEW LAMP POST.



LOCKING BASE OF POST.

The general effect of the lamp posts in the daytime is very pleasing. They are painted an unobtrusive gray color, and the large globe at the top gives a more symmetrical appearance to the whole post than the more common acorn globes. The necessity for having a wide diameter (6 inches) at the top of the post has hitherto made it a very difficult problem to deal with in the designing of an artistic post.

At night the lighting of the street is brilliant, but there is no objectionable glare, and at any point on the sidewalk printed matter, such as a street car transfer, can be read easily. The lights are so distributed that the shadow of a person walking along the sidewalk is scarcely perceptible. The color of the lights is a silver white. The adjoining buildings are illuminated to the top, but the light is so diffused that the bright band of light often seen on buildings opposite the globes, such as was noticeable in many of the earlier installations of inverted magnetite lamps, is not perceptible. A person occupying rooms opposite one of these lamps could hardly object to its presence on account of glare.

The installation of cables, erection of posts, etc., was done by the Potomac Electric Power Company, which has the contract for the street lighting and maintains the lamps. The municipality, however, furnished the posts, ribbed frames, glass and special parts, and deducts, from the $97.50 per light nominally paid the company, $4.40 as interest and depreciation on the $67.40 which it contributed to the construction cost as follows: Cast iron post, $26.90; cast aluminum ribbed spherical frame, $37.50; special parts, $3.00.

Cast iron street name signs with raised letters are used on the arc posts, suspended from a horizontal rod. On the incandescent light posts for the most part small box signs of glass with the letters cut out are used. It is the intention later on to use aluminum signs in place of the cast iron signs. However, the cast iron signs are quite symmetrical and in harmony with the posts and do not have the appearance of too great weight.

On June 30, 1913, there were in the district the following street lamps:

| | | |
|---|---|---|
| Mantle, gas | | 10,078 |
| Electric, arc | | 1,058 |
| Electric, incandescent | | 5,038 |
| Street designation lamps: | | |
| Gas | 434 | |
| Electric | 65 | 499 |
| | | 16,673 |

During the preceding fiscal year 164 naphtha lamps had been discontinued; the number of mantle gas lamps had been increased by 368; the electric arcs had been decreased by 164; the electric incandescents had been increased by 782, and the number of street-designation lamps had been decreased by 2—a total net increase during the year of 820 lamps.

There were in service 2,064 feet of cable laid in parking without conduits, and 651,030 feet in conduits, of which 47,161 were laid during the year. Of the total, 136,705 is owned by the District of Columbia, 1,536 by the United States government, and the remainder by private companies. There was also 32,806 feet of aerial cable in use, containing 1,152,104 feet of conductors.

From tests made by the Bureau of Standards, it appears that there is practically no difference in the illuminating value for street lighting purposes of tungsten lamps, whether placed in the upright or pendant position, in the center of opalescent globes. All such lamps installed during the last fiscal year were placed in the upright position.

# ENFORCING WATER CONTRACTS

## Is City or Consumer Proper Plaintiff in Suit Against Water Company for Violation of Contract—Court Decisions.

BY J. SIMPSON.

The question has several times come up in various forms as to who is the proper plaintiff in a suit against a water company for a violation of its contract with a municipality to supply the municipality and its citizens with water. Is the municipality the proper party to the suit as sole plaintiff, or must the private citizen pursue his remedy under the contract made on his behalf by the municipality?

The mayor and council of a Maryland city made a contract with a water company for the supply of the city and the citizens with water. In an action by the mayor and council as the corporate representatives of the citizens and water consumers in the city to restrain the water company from installing meters and charging rates alleged to be in excess and in violation of the contract the water company contended that the mayor and council did not constitute a proper party as sole plaintiff. In support of this contention it cited cases where the plaintiff sued to recover a loss suffered by him, and for which the municipality could not have sued, because such loss was not the loss of the municipality, but of the individual. The proceedings in this case, however, were distinguished as being instituted, not to recover a loss or injury suffered by an individual, but as being brought by the mayor and council, representing the consumers of water, the citizens, to prevent a possible loss to them by a non-compliance on the part of the water company with the contract made by it with the plaintiff. In executing that contract, the mayor and council acted as the corporate representative of the citizens and consumers of water in the city, and it was in that capacity that the city was now acting to enforce the performance of the contract. The court adopted the reasoning of the trial judge that "the party with whom the contract was made ought to have the right to enjoin the violation of such a contract as this; otherwise the municipality charged with the duty of providing for a water system and safeguarding the citizens' right in so doing would, after having performed all its duties and obligations satisfactorily, be powerless to enforce the performance of the contract, unless it could show some damage to itself as a corporate entity." It therefore thought that the mayor and council constituted a proper party to enforce the performance of the contract. Washington County Water Co. vs. Mayor and Council of Hagerstown, 116 Md., 497; 82 Atl., 826.

A water company had, by contract or agreement with the mayor and council of a town, agreed to supply the town with water for municipal and domestic purposes. In a suit by the mayor and council of the town against the water company it was alleged that this agreement was violated by the company by the diversion by it of water from the uses for which it was intended by the contract, thereby rendering the supply inadequate for the municipal and domestic uses therein provided for. Describing the bill, the court said: "The bill is, in effect, a bill for the specific performance of the contract. It was and is what is known as a continuing contract, in which the water company agreed for a term of years to perform a certain duty, and the city agreed to pay a certain compensation therefor. It is not the sort of contract which can be decreed to be specifically performed in the sense in which that word is generallly used; but it is quite clear, I think, and it is not disputed by counsel, that the court may exercise a jurisdiction by way of applying and enforcing a preventive remedy to deter the defendant from either openly breaking it, or from disabling itself from performing it." Mayor, etc., of Town of Boonton vs. Boonton Water Company, 69 N. J. Eq., 23; 61 Atl., 390. See also Long Branch Commission vs. Tintern Water Co., 70 N. J. Eq., 71; 62 Atl., 474.

Similar in principal is the case of the City of Winfield vs. The Winfield Water Co., 51 Kan., 70; 32 Pac., 663. The city had entered into a contract with the Winfield Water Company for the construction of a system of water works, and the supply to the city and its citizens of "well-settled and wholesome water." The city contracted for certain rates for the use of hydrants in the extinguishment of fires, flushing of gutters, etc. The company agreed to furnish water to the city free at certain public places, and to furnish it to the citizens of the city at certain rates. It was held that it was not only the right of the city authorities, under the contract, but their duty, to enforce the terms of that contract as to the quality of water supplied, not only to the city for public purposes, but also to private citizens for private purposes. The court added: "Certainly no private citizen has a right to compel the water company to perform its contract with the city."

The Texas courts are of the same opinion. In Cleburne Water, Ice & Lighting Co. vs. City of Cleburne, 13 Tex. Civ. App., 141; 35 S. W. 732, it was held that where a city has contracted with a water company to furnish water to its citizens, an action against the company to restrain it from enforcing higher rates than those stipulated in the contract is properly brought by the city, instead of by the citizens. "No public duty," the court said, "was imposed upon the water company by the contract with the city, nor did any contractual relations exist between the water company and the citizens of Cleburne that would give them the right to recover for a breach of the contract. The city not only had the right to sue to enforce the contract, but it was its duty to see that the contract was enforced, and the rights of the citizens protected thereunder." This case was followed in International Water Co. vs. City of El Paso, holding that the city is the proper plaintiff, rather than the individual private citizen, to compel the performance of its duty to the public by a public service corporation such as a water company

Taking the contrary view from the above cases, the New York Court of Appeals, in Pond vs. New Rochelle Water Co., 183 N. Y., 330, has held that the consumer himself is a proper party to sue. The opinion proceeded on the principle that, if one person contracts for the benefit of a third person, such third person may maintain an action on the agreement. "In the case before us," the court said, "we have a municipality entering into a contract for the benefit of its inhabitants, the object being to supply them with pure and wholesome water at reasonable rates. While there is not presented a domestic relation like that of father and child or husband and wife, yet it cannot be said that this contract was made for the benefit of a stranger. In the case before us the municipality sought to protect its inhabitants, who were at the time of the execution of the contract consumers of water, and those who might thereafter become so, from extortion by a corporation having granted to it a valuable franchise extending over a long period of time." It, therefore, held that a resident of the municipality might maintain an action restraining the company from enforcing collection of a water rate in excess of that fixed by the contract.

Citing the case of Pond vs. New Rochelle Water Co.,

the New York Appellate Division has squarely held that no action lies by a municipality either to reform a contract made by it with a water company fixing the rates for private consumers by striking out provisions therein, or to revise the rates fixed as unreasonable to the private consumer. If the rates were unreasonable the consumer was held to have his remedy. Mount Vernon vs. New York Interurban Water Co., 115 N. Y. App. Div., 658; 101 N. Y. Supp., 232.

The weight of authority appears to be that the municipality, and not the private citizen, has the right to maintain a suit to enforce a water company's contract to supply the citizens with water.

## BRIDGETON FILTRATION WORKS

### Coagulation Basin, Gravity Rapid Filters and Chlorine Tank—Details of Each—Pumping Plant —Efficiency of Filters and Pumps.

The city of Bridgeton, N. J., with a population of about 15,000, in August of last year put into service a new set of filters to purify water from a new source of supply. The municipal water works dates from 1877, when a small plant was built by the town, which grew until in 1910 the wells and infiltration gallery were inadequate for the needs of the city, and in that year Clyde Potts, of New York, was employed to report upon an increase in supply and equipment. The new plant has been built in accordance with his plans.

The limit of the ground water supply seemed to have practically been reached, and it therefore seemed necessary to use surface water and filter this to render it safe. The watershed from which is derived the supply which was selected covers 46.9 square miles and contains four large ponds which tend to equalize the flow. The minimum dry weather flow for several years past has been 23 million gallons per day. There are no villages and only a few farm houses on the watershed.

The water is taken through an inlet chamber on the bank of the stream. The opening is protected by three movable screens, the first of 2-inch by ½-inch iron bars spaced 1 inch apart, back of which are two screens of brass wire, the first of ¾-inch mesh and the second of ⅜-inch mesh. From here the water passes through 8,500 feet of 30-inch vitrified pipe to the filter plant, the conduit having a capacity of 4,200,000 gallons per day with a drop in hydraulic gradient of 4 feet.

At the filtration plant the water enters a coagulation basin at an inlet well about 4 feet square, from which it passes through a 30-inch balanced float valve into the basin proper. Any surge due to the sudden closing of this valve which might open up the joints in the pipe is prevented by an overflow weir in the inlet chamber. Soda and alum are used in treating the water and are applied at the entrance to the coagulation basin. The capacity of the coagulation basin is 150,000 gallons. When operating at normal capacity, the water requires a little over one hour to pass through this basin. At the outlet end the water flows into a concrete collecting trough from which a 20-inch pipe carries it to the sand filters. In case of an emergency, water can be pumped into the basin from the river alongside the plant by means of a 12-inch Worthington centrifugal pump having a capacity of 4 million gallons a day.

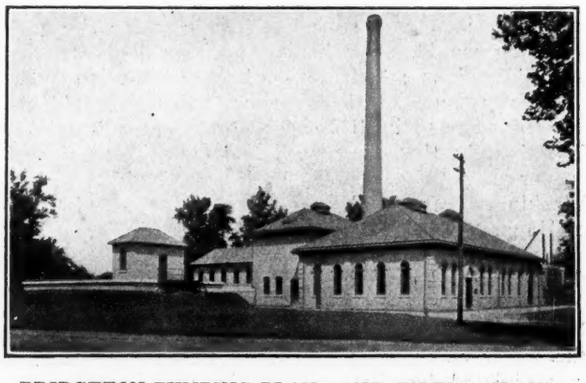
The filters are rapid filters of the gravity type and are six in number, each 12 feet by 14 feet 6 inches in area, and having a capacity of 500,000 gallons per day. (The average daily consumption at the present time is about 1,600,000 gallons and the maximum about 2,200,000 gallons.) The rate control is of the venturi meter type, consisting of balanced valves operated by diaphragms moved by the difference in pressure at the throat and full section of the venturi meter. Air is used in cleaning the filters, supplied at about 5 pounds pressure by a No. 3 Root blower directly connected to a 25 horsepower Troy engine. The beds require to be washed at intervals of from eight to twelve hours. About 1½ per cent of the total amount filtered is used for washing.

The filters are in two rows of three each with the pipe gallery between them. Under the filters and pipe gallery is the clear water basin which is 72 feet long, 42 feet wide and 11 feet deep, extending underground 28 feet beyond the end of the filter house. Its available capacity is 200,000 gallons.

The usual dose of alum required is about 0.6 of a grain per gallon. Since the water has an alkalinity of from 6 to 8, it is necessary to apply soda ash or lime a large part of the time; the latter seeming to give the better results. The chemicals are mixed in concrete tanks on the upper floor of the building, each of two alum tanks have a capacity of 3,500 gallons and each of two soda tanks a capacity of 1,950 gallons. The tanks are fitted with hot and cold water, and perforated brass air pipes are provided on the bottoms of each tank for agitating the solution. From the mixing tanks the solution flows to the porcelain-lined orifice tanks in the laboratory. The level in these orifice tanks is kept constant by float valves, and the outlets, brass needle valves, are adjusted to feed accurately the amount of chemical necessary.

Arrangements are provided for applying hypochlorite when the quality of the raw water is below normal. The solution is mixed in a 6x6-foot square concrete tank, located outside the building to prevent the chlorine fumes from coming in contact with the machinery, from which tank 1-inch lead pipes lead to the suctions of the two pumps. Brass needle valves are used to regulate the quantity applied.

An efficiency of 98 per cent in reduction of bacteria on gellatin at 20 degrees C. was guaranteed, and when tested this result was obtained, although the number of bacteria in the raw water averaged only 175 and 180, respectively on two consecutive days, and those in the filtered water averaged but three each day. No hypochlorite was used during these tests. This percentage is somewhat remarkable in view of the small number of bacteria in the raw water and the consequent almost total elimination which was necessary to reach this percentage of efficiency. Tests were made for B coli on agar at 37½ degrees, and these were found each day in 10 c. c. of raw water, but were absent in each case in the filtered water.

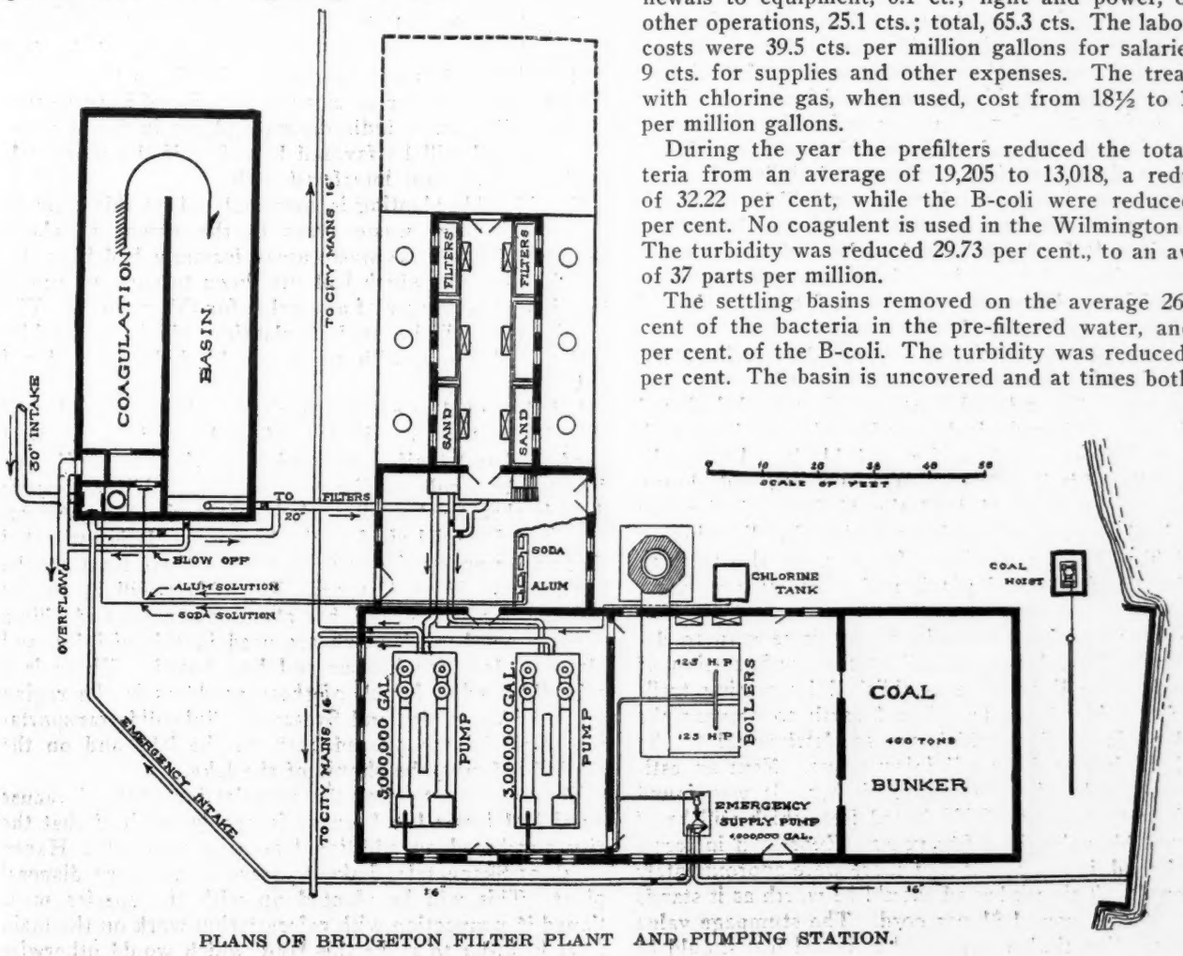


BRIDGETON PUMPING PLANT AND FILTER PLANT.

During August the bacteria at 37½ degrees varied from 45 to 180 in the raw water and from zero to 8 in the tap water. The amount of alum used in grains per gallon varied from 0.6 to 1.8. During the first part of the month soda ash was used, with from 1 to 1.8 grains of alum, while during the last few days lime was used with from 0.6 to 0.75 grains of alum; the results under the latter treatment averaging better than those under the former.

At the end of the filter house is the pump room, and at the side of this, making an L with the filter house, is the boiler house. Two crank and fly-wheel pumps take water from the clear water basin and raise it through a 16-inch cast-iron main to a concrete tank on the other side of the city which has a capacity of 2 million gallons. One of the pumps is a 17x34x14x30 Snow pump which has been in service for several years, has a capacity of 5 million gallons per twenty-four hours, and showed a duty when first installed of 111 million foot pounds per thousand pounds of steam. The other is a new 14x28x10¼x24 Platt Iron Works pump with a capacity of 3 million gallons. This pump when tested developed a duty of 125,174,000 foot pounds, the guaranteed duty being 120 million. The boilers were guaranteed to show an efficiency of 70 per cent, but at the test developed only 68.1 per cent, and a deduction was made from the contract price.

The cost of the coagulation basin was $5,820; filters, $17,960; clear-water basin, $13,256; pump house and grounds, $30,000; chimney, $3,020; coal bunker, $3,919; pumps and boilers, $21,934. This description is condensed from a report to the City Council by Henry Ryon who designed the plant as assistant to Mr. Potts and was appointed to the position of commissioner of public works at the beginning of 1913.




PLANS OF BRIDGETON FILTER PLANT AND PUMPING STATION.

## WILMINGTON WATER FILTERS.

The water purification plant of Wilmington, Del., has been described by us in previous issues, including the latest addition—the chlorine gas treatment. The report for the fiscal year ending July 1, 1913, has recently appeared, and from this, and especially from the report of the bacteriologist and chemist, James M. Caird, we abstract the following interesting data, first briefly stating the nature of the plant:

The water from Brandywine Creek flows by gravity to the preliminary filters, eight in number, which are composed of coke and sponge, through which the water passes upward. It then flows by gravity to pumps which raise it into a settling reservoir having a capacity of 35 million gallons. From here it flows by gravity to six slow sand filters which are operated at the rate of from six to seven million gallons per acre per day. A chlorine gas apparatus (invented by John A. Kienle, the former superintendent of the plant) was installed early in 1913. The average daily consumption was 11,423,729 gallons.

The average rate of filtration through the pre-filters was over 50 million gallons per acre per day; that through the slow sand filters averaged 5,850,000 gallons. The net yield per filter per washing was 9,817 million gallons. The average time between washings was 22.5 days, and the average period between rakings, 25.4 days. About one-third of one per cent of the filter yield was used for filter washing. The cost of slow sand filtration per million gallons was: Salaries, 40.6 cts.; labor, 5.7 cts.; supplies, 4.6 cts.; light and power, 15.9 cts.; repairs and renewals to equipment, 18.9 cts.; other operations, 37.9 cts.; total, $1.236. The cost of the preliminary filtration was: Salaries, 31.5 cts.; labor, 0.6 ct.; repairs and renewals to equipment, 0.1 ct.; light and power, 8 cts.; other operations, 25.1 cts.; total, 65.3 cts. The laboratory costs were 39.5 cts. per million gallons for salaries and 9 cts. for supplies and other expenses. The treatment with chlorine gas, when used, cost from 18½ to 19 cts. per million gallons.

During the year the prefilters reduced the total bacteria from an average of 19,205 to 13,018, a reduction of 32.22 per cent, while the B-coli were reduced 5.65 per cent. No coagulent is used in the Wilmington plant. The turbidity was reduced 29.73 per cent., to an average of 37 parts per million.

The settling basins removed on the average 26.6 per cent of the bacteria in the pre-filtered water, and 4.18 per cent. of the B-coli. The turbidity was reduced 28.85 per cent. The basin is uncovered and at times both bac-

terial content and color are increased while passing through it.

The final slow sand filter removed 98.82 per cent of the bacteria in the settled water, which was increased to an average of 99.23 per cent by four months' use of chlorine. The total bacterial efficiency of the plant was 99.62 per cent. The number of bacteria in the effluent after chlorination was above 100 on 61 days, or 16.7 per cent of the time. Tests for B-coli in 1 c. c. samples of final effluent after chlorination were positive in 121 cases out of 1,810, or 6.7 per cent of the time. The average removal of B-coli by final filters and chlorination was 92.04 per cent., and that of the whole plant was 93.10 per cent. There was a still further decrease in this organism of 37.2 per cent. in passing through the mains and in storage.

## WATER SHED FORESTRY

**By Water Bureau of Syracuse, N. Y., and College of Forestry of Syracuse University—Kinds of Trees and Methods—Newark, N. J.**

In our isue of January 22 we stated that the Syracuse, N. Y., Bureau of Water had bought about 160 acres of wooded land on the water shed of its source of supply, Lake Skaneateles, which was being developed under the direction of Prof. Nelson C. Brown, of the College of Forestry of Syracuse University. Prof. Brown's report of his first two seasons' work, slightly condensed, is as follows:

The primary object of this work was to have the most effective sanitary conditions in order to preserve the purity and cleanliness of the lake. With this object insured by the removal of the old Glen Haven Hotel and by the maintenance of the proper protection of the forest cover, the secondary object was financial profit resulting from placing the forest under scientific treatment. Thirdly, it was planned to have this municipal forest serve as a demonstration of the practicability of scientific forestry, and to show what the possibilities are along the lines of insuring both proper sanitation and commercial profits. It is also expected to have the tract serve as an experimental forest in which many problems connected with the improvement, care and regeneration of forest lands may be solved.

The general type of timber is second growth, mixed hardwoods with some hemlock. Practically every species known to Central and Northern New York is found on this area. The principal trees in order are basswood, chestnut, hemlock, red, white and black oaks, maple, beech, yellow birch, yellow poplar, elm, ash and cherry. During the summer of 1912 the College of Forestry maintained a party of students under the direction of Russel T. Gheen, a graduate forester, on the tract to organize the forest and put it under scientific management.

The first work was to make an accurate map to determine the boundaries as well as the configuration of the land. Fire lines were established by cutting trails three feet wide down to mineral earth to prevent the spread of forest fires which are so detrimental to the growth of forests from adjoining tracts. Next an estimate was made of the standing timber. It was found that there were over 600,000 board feet which will be of merchantable value in a few years. Expressed in terms of cordwood, it was found that there were approximately 2,000 cords. This cordwood should be worth as it stands on the stump around $1 per cord. The stumpage value of the standing timber expressed in board feet should be in a few years from $2 to $12 per thousand board feet depending upon the species, their conditions, and their location. However, the timber is still in splendid growing condition and should not be marketed for several years to come. Following the estimate, a trail was cut through the forest from the lake to the top of the slope, both to furnish a means of access in getting over the tract and also as a means of transportation in getting out the forest products from time to time. Following this operation an improvement thinning was made to weed out undesirable or inferior trees as well as the crooked and diseased trees which should be removed for the good of the forest and to promote the most rapid growth of the trees left standing. In other places the forest, as the result of past fires, has been damaged so seriously that it will be necessary to plant up the open space with rapidly growing conifers. It is estimated that under forest management, the growth should be increased from one-fourth to one-half above that under natural conditions. Reproduction is taking care of itself under natural conditions, both by seedling and sprout reproduction.

On account of their rapid growth, freedom from common diseases and splendid quality of wood produced, the following trees will be favored in managing this municipal forest: Basswood, chestnut, oaks, ash, yellow poplar and cherry. As yet the chestnut-blight disease which has done so much damage in killing all of the chestnut trees within a radidus of twenty-five miles of New York City has not reached this section of New York, and every effort will be put forth to stamp it out should it spread to this forest.

The species that will be discriminated against in management are the dogwood, poplar, aspen, ironwood, hemlock, soft maple and ailanthus, on account of their comparatively slow growth and also on account of the fact that their wood is not nearly as valuable as those mentioned above. Other species not mentioned in these two groups will occupy indiscriminate places in forest management and will be favored hereafter if the more valuable trees are not interfered with.

Considerable planting is contemplated on this tract to utilize otherwise waste areas to the extent of about twelve acres. These waste areas formerly had been devoted to pasture which had run down to such an extent that it was no longer of any value for this purpose. The species that will be used in planting will be red, white and Scotch pines, with some ash, black locust and red oak.

It is intended to eventually change the composition of this forest from a mixed hardwood stand to a mixed hardwood and coniferous stand or nearly pure coniferous forest. As a rule conifers grow more rapidly and more densely than hardwoods, and therefore give a greater return and financial yield in the long run. It is estimated that under proper forest management these trees can be cut in from 25 to 40 years. The object will be to not only produce fuel wood, but also posts, poles and piling. a great number of which are used in this vicinity, and also saw logs for lumber and box boards. There is a splendid market for all of these products in the region around Skaneateles and Syracuse. Splendid transportation facilities are offered both on the lake and on the roads bordering the shores of the lake.

The success attending the organization of the Syracuse municipal forest has been so favorably received that the city purchased an additional acreage near Glen Haven south of Skaneateles Lake, to serve as a sewage disposal plant. This will be planted up with the species mentioned in connection with reforestation work on the main tract in order to make this land, which would otherwise

be unproductive, yield annual returns in the form of valuable forest products.

During the field season of 1913 the city of Syracuse made an appropriation of $1,500 to continue the forest work of improvement and planting from time to time. This work will be continued to bring about the highest and best conditions of forest management, and products will be marketed from time to time. It is estimated that even under present conditions a return of around $2 to $3 per acre per year should be gained from this tract by the sale of cordwood, saw logs and other products of the forest.

Many municipal forests in Germany have been known to yield a net income of over $5 per acre per annum after all expenses for administration and protection have been deducted. Compared to agricultural yields these figures are not high. But when we consider these forests occupy soils wholly unsuited for tillage or more valuable purposes, it is an excellent return on the investment.

In addition these forests are serving a real purpose in placing other waste lands to reproductive and profitable use, in supplying a cheap and abundant lumber and fuel supply, and in providing employment to a large number of men.

FORESTRY OF NEWARK WATER DEPARTMENT.

Of the watershed from which the city of Newark obtains its water supply 21,268 acres, which is 52.3 per cent of the entire watershed, is owned by the city. All residences have been removed from this, even the employees of the Water Department being housed in a small village below the intake, and the growth of trees upon the watershed is encouraged by both care of the old trees and planting of new ones. During the year 1912 about 150,000 young trees were set out, mostly ash, locust, spruce and Scotch pine. At the same time the nursery contained about 40,000 two-year-old Scotch pine and 8,000 black walnut trees, the latter being raised from nuts scattered on the watershed. In spite of the extremely dry weather of the previous three or four years, the superintendent of the department reported that the trees which had been set out on the watershed during that time had been doing exceedingly well.

During the winter dead trees are cut off of the watershed and sold as cord wood, and while the returns thus obtained do not equal the cost of the work it is believed that it is justified by the danger which dead trees are in case of forest fires and by their interference with the growth of living trees. There are five roads running northerly through the watershed which serve as fire lanes, and it is recommended that fire lanes running east and west be cut across the watershed, which would also serve as roads for carting out timber.

## HANDLING GRAVEL IN DAM CONSTRUCTION.

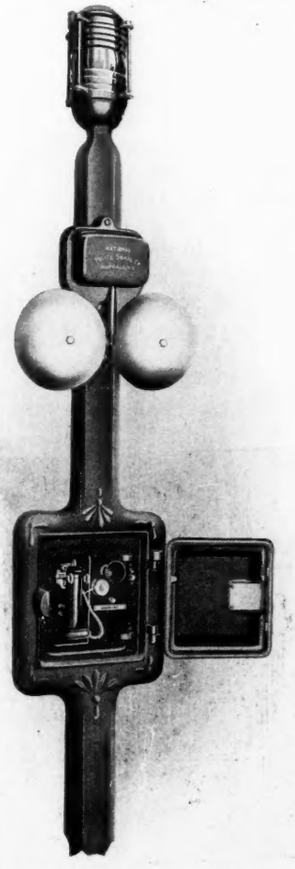
In construction a concrete dam across the Cuyahoga river for the waterworks of Akron, O., the contractors, the Ambursen Hydraulic Construction Company, obtain the sand and gravel delivered on the job by H. L. Beavis of Earlville from his bank 1.1 miles away. The road over which it is hauled is a rather difficult one which on the way descends into a creek bottom and mounts again to the plateau by a quick turn on an 8 per cent grade. A five-ton Peerless truck is used, which carries 11,400 pounds of gravel and delivers about 85 tons in a nine-hour day. The superintendent of the construction company, W. E. Maxson, say that the cost of haul is $16 a day, and would be $56 if teams were used. The truck is loaded at the pits by use of a clamshell bucket.

At the dam site a special unloading platform is used, nine feet high with an approach 50 feet long (giving an 18 per cent grade). In the center of this is a trap a few inches narrower than the distance between the insides of the rear wheels. The truck is run over this trap and dumped by a screw powder hoist. Underneath the trap is a hopper and under the mouth of this a belt conveyor 16 inches wide with a loaded travel of 135 feet at a speed of 300 feet a minute on an incline of about 25 degrees. The conveyor discharges the gravel into the concrete mixers. By this system no hand labor is required at any point between gravel bank and mixed concrete.

## SOUTH BETHLEHEM'S POLICE SIGNAL SYSTEM.

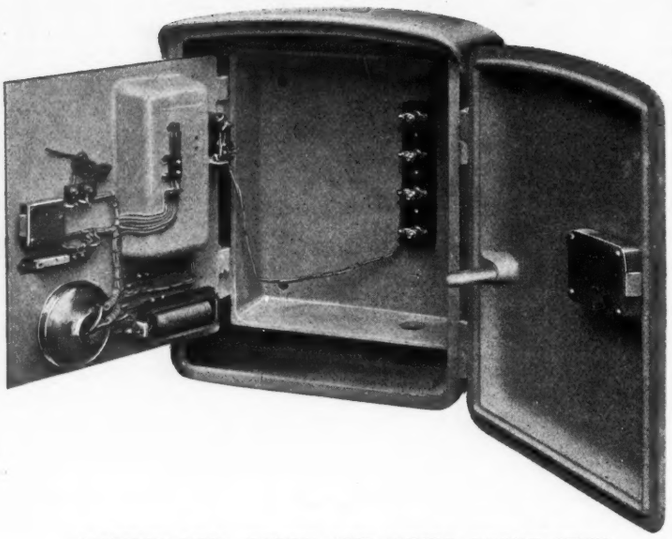
A new police signal system has been installed in the city of South Bethlehem, Pa., and was placed in operation for the first time on February 4, although it had been put through a thorough test in its various elements before that time. The system is the same as that which is in operation in Buffalo, N. Y., but is said to contain improvements which had not been perfected when the Buffalo system was installed. The contract for the system was let by the council in January of last year (when South Bethlehem was still a borough); but, owing to delays in outside construction work which had been contracted for with another company, the installation of the police signals was delayed until two or three months ago.

The new system contains 15 alarm stations, each on a single circuit, so that if one station is out of order it will not affect any of the others. Each station is equipped with a waterproof box provided with a telephone, a loud ringing bell and a red lamp, which, when lighted, is visible for a long distance. The bell and lamp are used for calling the attention of the police officer when headquarters desires to reach him, and a code of signals of a succession of taps or flashes can be used. Also an officer from his station may report to headquarters and may communicate with the officer in charge by telephone, the time being automatically recorded when the receiver is taken from the hook; or he may, if in serious trouble, open the box and press the emergency button which will notify the man in charge that help is wanted, the distress signal continuing until the officer in charge gives notice that he has received it by flashing the lamp.



MODEL A, STREET EQUIPMENT.

The system is operated by current supplied by special batteries in the battery room at police headquarters, there being two sets of batteries, so that one may



PATROL BOX—OUTER AND INNER DOORS OPEN.

be used while the other is being charged. The current for recharging is taken from the regular alternating current which is used for the city street lighting but which is first transformed to direct current. If a short circuit should occur at any place on any line or lines, a fuse burns out automatically, preventing the damaging of any of the apparatus. One feature of the system is an automatic arrester which prevents damage by lighting overcharge or any foreign current. The arrester will automatically repair itself. Should a short circuit, an open circuit or a "ground" occur, this will immediately be indicated on the switchboard by the illumination of a red lamp, and this lamp will remain lighted until the line or station is repaired. It may be ascertained from the main switchboard whether the difficulty is on the line or in the station.

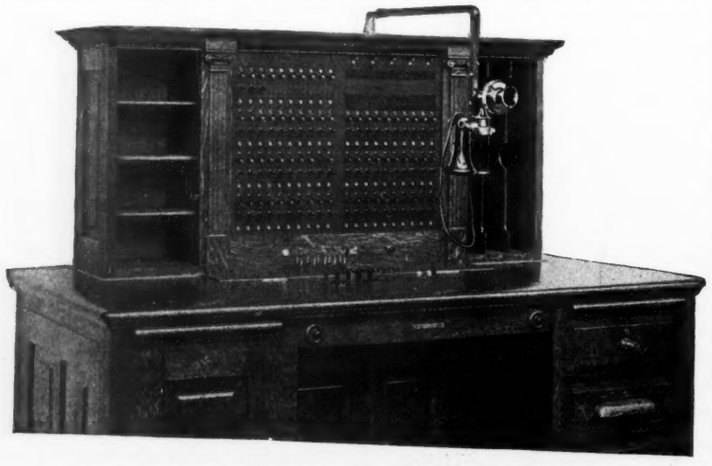
From the switchboard, which is located in the chief's room, the chief, night sergeant, or whoever may be in charge, may at any time call one, two or any number of officers at once. Attached to the switchboard is a time recorder, which registers the exact time when an officer makes a report and from which box the report was made. It is said to be absolutely impossible to make a fraudulent report, as the key to the recorder is in charge of only one or two persons, and every time the door of the instrument is opened or closed the time is recorded.

The recorder consists of an electric-time recording device so arranged and mounted that the record remains in constant view for as many hours as desired.

If the man in charge wishes to speak to a certain officer but is not in a hurry, he may so arrange the switchboard that when the officer opens his station box to report there is a "whistle back," a peculiar whistling noise, showing that headquarters wishes to communinacte with him.

The patrol box apparatus consists of a telephone transmitter, receiver and hook-switch, wagon or emergency call equipment and door switch for disconnecting all the apparatus from the line when outer door is closed.

This system cost about $2,500 and was installed by the National Police Signal Company of Buffalo, N. Y. The outside construction was done by the Bell Telephone Company, which will be in charge of the upkeep of the system.



DESK TYPE CENTRAL STATION SWITCHBOARD.

## HORSE CHEMICAL AS MOTOR TRAILER.

The Evanston, Ill., Fire Department has a triple combination 110-horsepower motor pump, hose and chemical at Station No. 1, which takes the place of a horse chemical, engine and hose cart. The chief believes in chemicals, which reach the fire before the steamers, and Chemical No. 1 put out half the fires, while the chemical tanks on trucks Nos. 2 and 3 accounted for a large percentage of the others, the steamers being held in reserve but rarely used. The triple combination reaches a fire sooner than did even the horse chemical, and if the chemical cannot extinguish the fire the engine is run to the nearest hydrant, paying out the fire hose as it goes.

But while the triple is on the way to the hydrant and getting up pressure there is neither chemical nor water

MOTOR WITH CHEMICAL TRAILER ATTACHED.

in service; and the chief dislikes to throw off the chemical before he is sure it will not put out the fire, while if he waits too long with the water the fire may gain too much headway. The motor hose wagons in Atlanta which tow the old steam fire engines to a fire uncouple them at the hydrant and run onto the fire, striging the hose, suggested to him that the old horse chemical be towed by the triple combination. The pole of the old chemical was sawed off just in front of the dash, a coupling rigged up on the link and pin principle, and a trial run made. But the coupling pin was jolted out and, with all control of the rapidly traveling chemical lost, the two men riding on it were soon in the hospital, one with a broken leg. After this the pin was fastened in place with a leather strap and snap and there have been no more mishaps after five months of service, although the chemical has to take corners a little carefully and keep within the legal twenty miles an hour speed limit. In a great many cases the chemical alone is used for extinguishing the fire, but the pumping engine is on hand when needed.

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CHANGE OF ADDRESS

Subscribers are requested to notify us of changes of address, giving both old and new addresses.

Contributions suitable for this paper either in the form of special articles or of letters discussing municipal matters, are invited and paid for.

Subscribers desiring information concerning municipal matters are requested to call upon MUNICIPAL JOURNAL, which has unusual facilities for furnishing the same, and will do so gladly and without cost.

FEBRUARY 26, 1914.


CONTENTS



## Police Lighting as a Police Auxiliary.

Some time ago floods put out of commission for several days both the hydraulic and steam power lighting plants of a northern New York city, in which electricity was relied upon exclusively for street lighting. This meant great inconvenience to the citizens, of course; but this was by no means the most serious consequence. Another danger was realized by the city officials, and at once the police force was quadrupled by swearing in deputies to patrol the streets at night, and detectives watched all incoming trains and gathered in any suspicious characters. They realized that highwaymen, burglars, "fire-bugs" and all classes of criminals would recognize this as an opportunity too good to be lost.

Recently the Chicago "Tribune," commenting upon the higher rate of burglar insurance in that city than in any other in the country except two comparatively small ones, asserted that "there are hundreds of by-streets in Chicago that not many men of courage will venture to traverse after dark unless driven by absolute necessity"; and gives as the remedy: "It is the side streets, the out-of-the-way streets, that need the very best of lighting. Flood the vicinity of the most ramshackle buildings in the city with a powerful stream of electric light at night, and * * * they will cease to be thieves' nests."

When public streets were not lighted, or only by an occasional oil lantern, doors and windows were barred and bolted at night, and the rich maintained an armed guard at all times to protect their houses, while no honest man thought of going out at night unarmed, and generally also took a guard with him for protection. And if our streets were not lighted those conditions would return.

This function of public lighting is too often overlooked. Dazzling brilliancy is demanded for the "white light" district, but the alleys and by-ways are left entirely unilluminated. Most burglaries, murders, hold-ups and incendiary fires occur at night, almost solely because of the concealment and chance for escape offered by the darkness. The more the darkness is eliminated from the streets and other public places the less will we have of these crimes. And the financial saving alone resulting from such immunity would more than pay for the lighting.

## Engineers' Estimates in Contracts.

The relation between contractors on the one side and municipalities and their engineers on the other is one which has of late years received considerable attention; but there is still much to be done before these relations will have reached the point where they are fair to all parties and adapted to securing the best results. There is still a tendency on the part of the city to consider the contractor as more or less of a highwayman with whom it is unfortunately necessary to have occasional dealings; and there are still engineers not possessed of that judicial spirit with which they should undertake the functions of unprejudiced arbitrator with which they are endowed by most contracts.

One point in which it is claimed the engineers are unfair to the contractors in many cases is that of the engineers' estimates of quantities and costs—either by not giving them or by an unfair use of them. In fact, a Canadian contractor calls attention to the custom of asking for a lump bid for a piece of work for which the plans and specifications are submitted but requiring the contractor to figure out the quantities himself. This, he states, is unfair to the contractor, as an error on his part in figuring out the quantities would either cause his bid to be too high and thus deprive him of the contract, or else it would be too low and cause him to lose money on the work. Moreover, he believes that it would contribute to collusion between contractors, in that they would naturally compare notes as to quantities and thus open the way to a "gentlemen's agreement" as to prices, to the disadvantage of the city. In most cases the engineer has already calculated the quantities, and there would seem to be no good reason why he should not state them.

The more common method (in this country, at least) is for the engineer to state the estimated quantities of each item and compare the bids on the basis of such quantities. It is generally provided, however, that these quantities may be increased or decreased during the construction of the work, and in the majority of contracts no limit is placed to such change. Ordinarily little exception can be taken to this method, since it must be realized that in most work it is impossible to fix beforehand the exact quantities of each item necessary to complete the work. Contractors have complained, however, that this clause permits altogether too much freedom to the city, and that a certain item could be increased not only five or ten per cent, but ten-fold or more, or could be similarly diminished in quantity. Thus, for instance, a contractor might assemble on the ground an expensive equipment for removing rock from water pipe trenches, only to have the city decide after the work was begun

to alter the route of the trench so as to avoid rock cutting altogether, in which case the contractor gets no return from the expense which he has incurred in preparing for extensive rock work. It would seem only just to the contractor to set a limit to the amount by which the quantity of any item could be increased or decreased; and then, if it is necessary to exceed this limit, to have the additional amount come under the head of special work, the allowance for which is to be agreed upon by mutual consent or arbitration, or by prices or allowances fixed in the contract.

## WATER WASTE INSPECTION.

The Water Department of Wilmington, Del., last year conducted an investigation of underground leakage and waste by consumers, using the method previously employed at Lancaster, Pa., and described in our issue of June 20, 1912. The report of S. N. Van Trump and D. H. Van Trump, who conducted the investigation, is as follows:

"The method employed in making this investigation was similar to that used at Lancaster, Pa., with the exception that a Pitometer was utilized in testing large districts to check results.

"The operating force consisted of four men, of which two were inspectors, one a laborer and one a driver; 4-inch Trident compound meter, mounted on a truck; 500 feet of fire hose; horse and wagon; and all necessary street tools.

"Certain sections of the city were laid out and house to house inspection made, taking account of all fixtures. At the same time service was examined for leaks between cellar and curb by means of an aquaphone. The district was then cut out by shutting down the street valves. Water was by-passed into the district through 4-inch meter by connecting two fire plugs—one in district tested, the other outside of district. The natural or actual consumption was determined by a ten-minute reading of the meter. All services except those that were leaking between curb and cellar were cut off at cellar stops, the latter being shut off at curb. By another meter reading the leakage in the main proper was determined.

"The total cost of making the entire inspection was $1,213.93, which includes all labor, material and repairs to mains where necessary. The cost per mile varied with the local conditions and the size of the district, the average cost being $128.00.

"In addition to the house to house inspection in district tests, a number of large main leaks were discovered, the principal ones being on the 24 and 16-inch submarine mains across the Brandywine at West street, which were found to be leaking 918 and 34 cubic feet per hour, respectively; on Front street, between Jackson and Monroe, a broken main leaking 402 cubic feet per hour, and service at 1810 West Third street, leaking 100 cubic feet per hour. By the use of the Pitometer the consumption on the various systems of service were determined and found to be as follows: Low service, 8 to 9 million gallons a day; high service, 3 to 4 million gallons a day; extreme high service, 250,000 to 500,000 gallons a day

"The results of this inspection indicate that the majority of leaks in our system are fixture leaks for which the property owners are responsible, and we would recommend that preparations be made to continue the house to house inspection as a matter of the routine duty of the department."

A table accompanying the report shows that in 2,513 houses 310 fixture leaks were found.

## CITY MANAGER GOVERNMENT*

### Its Origin at Staunton, Va,—The Staunton Ordinance —Arguments in its Favor by a City Manager

By CHARLES E. ASHBURNER.†

It seems strange that a form of government for cities that bids fair to be the most popular of all the many plans should have come into existence by accident; but such is the case. During 1907 the leading citizens of Staunton, Virginia, tired of the wasteful methods employed in the management of the city's affairs, began an agitation for a commission form of government—the only remedy then known for the council form of mismanagement. The state constitution of Virginia put an end to their dreams for a while at least. Then, as the sun appears through the clouds after a thunder storm, came the possibilities in the words in the city charter, "and such other employees as they may deem necessary, and designate their duties." The general manager plan was born.

After much wrangling and after a great deal of shifting of positions, the following ordinance was passed by a small majority:

**An Ordinance Creating the Office of a General Manager for the City of Staunton, Virginia.**

Be it ordained by the Council of the City of Staunton, Virginia:

1. That there be appointed by the two branches of the Council in joint session as soon as possible after the adoption of this resolution and thereafter annually at the regular election of city officers, in July of each year, an officer to be known and designated as "General Manager."

2. The General Manager (except in case of the first appointment under this resolution, which shall be until the next regular election of city officers in July, 1908) shall hold office for the term of one year and until his successor is duly elected and qualified, unless sooner removed by the Council at its pleasure.

3. The General Manager shall be paid an annual salary of * * * dollars, and he shall have the right to employ one clerk at a salary of * * * dollars per annum, to be paid by the city, the amount to be hereafter fixed by the Council.

4. The General Manager shall devote his entire time to the duties of his office and shall have entire charge and control of all the executive work of the city in its various departments, and have entire charge and control of the head of departments and employees of the city. He shall make all contracts for labor and supplies and, in general, perform all of the administrative executive work now performed by the several standing committees of the Council, except the Finance, Ordinance and Auditing Committees. The General Manager shall discharge such other duties as may from time to time be required of him by the Council.

5. The General Manager before entering upon the duties of his office shall execute a bond before the Clerk of Council in the penalty of $5,000 with good and sufficient surety, conditioned for the faithful performance of the duties of his office.

The plan as operated in Staunton with a two-bodied council—committees composed of the members of both bodies, who are supposed to be advisory boards to the manager in each department—cannot possibly get results that are lasting. So we can put the Staunton plan entirely out of consideration. Credit must, however, be given to those thoughtful men who made the best of their opportunity and started people thinking on the proper lines. It was the Staunton plan that grew into the Sumter plan and, coming nearer home, we have the Dayton and Springfield charters as direct descendants of the general manager plan. The manager plan with a small commission of three or five with a hired manager, is, in my opinion, the only possible solution of

*Paper before the Ohio Municipal League.
†City Manager of Springfield, Ohio.

the municipal problem in small cities. The management of municipal corporations is one of the most complex lines of business management known to man; it is impossible for a man without a peculiar line of experience and one who will give an unlimited amount of thought and study to successfully handle the many different lines of business. Councilmen cannot do it during the time they give to city affairs. The head of a department devoting all his energies toward the success of the department does not see where he can improve the efficiency of the city's business by a combination with the man at the head of some other department, and, even if he does see a chance to improve things by such combination in some instances, he has trouble to make the other departmental manager see through the same glasses. For these reasons, to say nothing of petty jealousies, we have a lack of the harmony necessary for the best results. The trained city manager with authority, being equally interested in all the departments, is the only man who can bring harmony out of conflict and order out of chaos.

There are some advocates of the commission form where the commissioners divide the work, each taking the management of some department. If there is success in that form of government in small cities, I think it can only be a matter of luck. How can voters select men, three or four, who have knowledge of the branches of government they are supposed to manage? Again, the salaries necessary to pay three or four competent men is prohibitory in a small city. No man can successfully manage any branch of municipal affairs unless he devote his entire time, thought and energies to the particular work, and, if he does this, he will become absorbed in his particular branch and be unable to do justice to other branches when he meets with the other commissioners on the general business of the city. Imagine three perfect departmental heads, all of whom are commissioners, meeting and trying to be unbiased in the division of the tax duplicate. Show me a good department head, I will show you a bad commissioner. The only possible connecting link between the legislative and the operative branches is the hired manager. The commissioner is the director; he is the same man you find in the Standard Oil Company, the railroad, the bank, the local ice company, or in any other corporation. He is the keen business man who does not pretend to interfere with the operating machinery, but who knows when the man at the helm (the manager) is delivering the goods.

It has been argued that men suitable for managers of cities are hard to find. True; because there has been small demand for such an article; but I am sure that they will develop as rapidly as the demand, so this is merely a ghost trouble. The real trouble with the business management of small cities is the fact that in small communities each citizen knows more about his neighbor's business than he does about himself, and such familiarity makes men cowardly when it comes to doing their duty, if such duty should offend their neighbor. The hired manager's future in life is dependent upon his fearless discharge of his duties. He may be turned down and crushed temporarily, but the business men of this country are looking for such men. Another argument in favor of the hired employee. First, the commissioners, three or five, with nominal salary as a board of directors, one of whom is selected by the commission to be president of the body and for all legal purposes to occupy the position of mayor. The commission to hire a manager who shall hold office during the pleasure of the commission.

The treasurer and auditor should also be appointed by the commission, but every other city employee should be appointed by the city manager who should, of course, be broad enough to allow the heads of departments to select their help. The manager, armed with this authority, should be held to strict account for results and should be removed whenever the commissioners find that they can improve the service by his absence.

Nothing but strict, impartial, unbiased, honest and fearless business should be tolerated in any city hall.

America can and does produce the type of man necessary, and as soon as a public conscience is aroused that will support such men they will come out of the service of the big corporations and give their time to the citizens of our municipalities. Heretofore few clean men have been willing to accept the mud and slime of politics thrown upon those who dare to do their duty.

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## WATER DEPARTMENT CHARGES.

The engineer of the water department of a New Jersey city writes us as follows concerning the proposals which have been made to charge against undeveloped property the cost of mains laid in front of it, and against other departments for water used by them:

"The justice of making a charge against undeveloped property" (for laying mains) "is based entirely on the fact that this department receives no money for mains laid in new streets, the entire expense being charged to our capital account. Properties fronting on streets where mains have been laid are, of course, benefited materially by the fact that water is in the street ready for supply to any building that may be erected and for fire protection; and it seems only just that the undeveloped properties should not receive the benefit derived from the presence of a main without paying at least a small return for this improvement. Of course this is the old argument on the question of 'unearned increment,' and we do not feel sure that this charge can be levied without some protest on the part of some of our land owners. However, the state law of New Jersey recognizes the justice of the charge and gives the municipalities throughout the state the right to make such a charge.

"The second matter is also one which we consider to be based on absolute justice and, more than that, on common sense business principles. That any one department of a municipality receiving no benefit from the general tax levy should be called on to supply other city departments with large quantities of water and furnish fire protection without any compensation therefor seems unjust when considered even from the simplest rule of business management. The most obvious result is, of course, to increase the operating expenses of the donating department and by a like amount decrease the operating expenses of other departments. What such a course might lead to can be seen when the difference between a successful department and an unsuccessful one might depend on the amount which the general municipal government should pay to the donating department. Looking at it from another angle, it is easy to see that there might come a time in the history of the donating department when its normal revenue surplus might be insufficient to meet the required capital expenditures in any one year and be forced to issue bonds or other paper obligations; thus actually, in the final analysis, issuing bonds for current expenses, since so large a proportion of the expense of the department has been due to the necessity of furnishing this free service. Other ramifications of results that might be produced through such a course as we are now forced to pursue will probably present themselves to your mind."

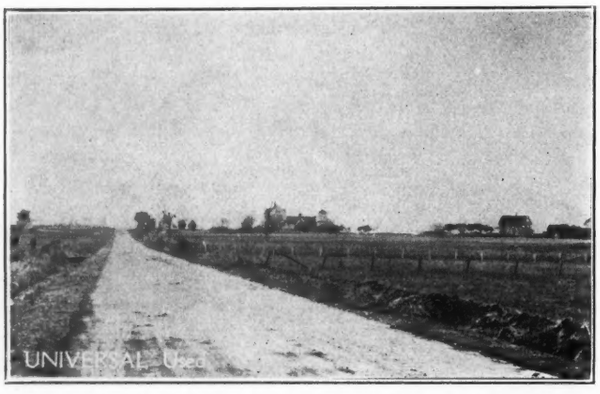
# The WEEK'S NEWS

**Fort Worth (Tex.) Spends $830,000 on Roads—San Diego's (Cal.) Sewage Disposal Problem—Earthquake Cracks Water Mains in Gouverneur, N. Y.—Firemen Ruled Exempt from Eight-Hour Law—New Charter Adopted by Commission in Columbus, O.—Municipal Abattoirs in Seville, Spain—Cities Seek Publicity.**

## ROADS AND PAVEMENTS

### The First Concrete Road in Cook County.

Chicago, Ill.—Cook County (Chicago), for many years backward in permanent road construction, has taken the initial step by the construction of over 4,000 feet of 16-foot concrete high-way on Church street, between Evanston and Niles Center, a road which carries a heavy truck garden traffic and provides an outlet for autoists leaving Chicago by way of Evanston for northwest towns. The cost was shared equally by the Township of Niles, Cook County and the Evanston Commercial Club.




CHURCH STREET, IN COOK COUNTY, PAVED WITH CONCRETE.

Concrete was decided upon for this strip of road in order to demonstrate to the tax payers of Cook Counuty the adaptability and durability of this material for highways. The location was chosen in order to show the service to be expected from concrete where foundation is boggy, which condition obtained for about one-third of its length. The satisfactory service of concrete under these conditions will answer any question as to its serviceability for any other road in the county.

The men responsible for the selection of concrete for this highway were influenced in their decision by a careful personal inspection of the 80 miles of concrete roads in Wayne County, Michigan.

### Must Be County Road For State Aid.

Albany, N. Y.—The State Fair boulevard will have to be improved as a county highway if the State is to contribute toward the cost. This was the decision reached by State Highway Commissioner John N. Carlisle at a conference with Senator J. Henry Walters. Mr. Carlisle stated that an examination of the funds available from the first $50,000,000 bond issue showed that there will not be a balance which can be applied for constructing the boulevard. All moneys from those bonds, it was stated, would be required to complete roads under contract for which money has been appropriated. This places upon the Board of Supervisors, it was stated, the next move for the improvement. The driveway can be improved as a county highway to be built by the State paying 65 and the county 35 per cent. of the cost. If placed upon the county map by the board with the approval of the city the State can award a contract. Chief opposition is expected from the town supervisors, but as this is the first highway improvement inside the city of importance so far proposed and as the city pays about 80 per cent. of the county taxes it is believed that the proposition will be given favorable consideration.

### Paving Progress in Fort Smith, Ark.

Fort Smith, Ark.—A little more than one mile of paving has been laid during the month of January, according to the report of Commissioner Hays, that was filed recently. The report shows that of the 15,645.59 square yards laid, 4,370.95 square yards were of brick and 11,274.64 square yards were of concrete. As the streets that were laid last month run a little less than 1,000 square yards to the block, there were more than 16 blocks, or 1,600 lineal yards of paving put down. It was all constructed in that part of the city which was suffering worst from poor streets, hence the paving thus located is of great benefit to the city as a whole. More than a mile and one-half of curb and gutter, 8,965 lineal feet and 200 lineal feet of sidewalk have been constructed during the month, and the engineering department has set 17,744 feet of grades for curb and gutter and sidewalk construction. Fifty-four certificates on curb and gutter have been issued and 20 notices to construct curb and gutter served.

### Property Owners Need Not Pave Between Tracks.

Philadelphia, Pa.—The supreme court has affirmed the opinion of Judge Willson that the city cannot assess and collect the cost of street paving against property owners where car tracks are laid. The decision involved a contract entered into by the city in 1907, with the Philadelphia Rapid Transit Company, whereby, in consideration of the annual payment of a lump sum of $500,000, the city relieved the transit company of all paving obligations.

### Roads Will Cost $830,000.

Fort Worth, Tex.—According to Supervising Engineer Travilla's latest estimate, the eight cardinal roads now being constructed in Tarrant County will cost, when finished, not more than $830,000, leaving over $100,000 of the million-dollar road bond fund for expenditure in building lateral roads. Several of the cardinal roads are costing above the first estimate, but others are costing less, so that the total expense will not be greater than the amount of the appropriation, which was $831,000. The Commissioners now are satisfied that the funds on hand will be sufficient to complete all the roads and leave a small surplus on hand when the work is finished.

### Location of City Increases Cost of Paving.

San Antonio, Tex.—After extensive investigation into the cost of paving in Texas cities, Mayor Brown will submit to the council, a report indicating the comparative costs. Higher freight rates and cost of local materials are attributed by the mayor as the cause of high paving charges in Texas.

"In one city, for instance," said Mr. Brown, "I learned that concrete can be laid for a total of 40 cents a yard instead of 80 cents, the price in San Antonio. That represents 40 cents right there. Then, too, on a number of materials other cities enjoy better rates than San Antonio, due, probably, to proximity to the sources of supply or to the competition of water rates."

### Award Asphalt Contract.

Indianapolis, Ind.—On the recommendation of B. J. T. Jeup, city engineer, the board of works, has awarded a contract to the Barber Asphalt Company for three hun-

dred tons of California D grade asphalt. The price bid was $20.61 a ton. Bids were submitted on thirteen different grades or brands of asphalt. Eight of the bids, according to Jeup, did not comply with the specifications on account of the percentage of carbon.

### Highway Course for City Officials.

Knoxville, Tenn.—A course of lectures on road building is now in progress at the University of Tennessee. It is the first course of its kind here and will be adapted to the needs of county engineers, supervisors, secretaries of county road commissions, road contractors, members of the county court and every citizen who is interested in good roads. The course will cover such subjects as road construction, materials, Tennessee road laws, highway maintenance, etc. Among the lecturers are Prof. Blanchard of Columbia University and Dr. Hewes of the road office in Washington.

## SEWERAGE AND SANITATION

### San Diego's Sewage Problem Like New York's.

San Diego, Cal.—That San Diego faces a serious problem through the continuous deposit of sewage on the tidelands of the bay and that it constitutes a serious menace to the health of the residents of both Coronado and this city was the opinion expressed by Harbor Master A. J. Foster. While the harbor master has been cognizant of these conditions for many months and has frequently called the attention of the municipal authorities to the matter, it was brought forcibly before him by a comparison of the problem formerly confronting New York City, which was solved by establishing a huge trunk line sewer siphoning under East River and running for thirteen miles in a direction generally southward, straight through Brooklyn, crossing Coney Island and thence to a point opposite Sandy Hook. There the sewage was pumped on barges and towed out to sea. The pipe line cost the city of New York $22,874,000. Regarding conditions in San Diego, Foster said:

"The danger to the public health and decent living of the people of San Diego through the continued pollution of the harbor waters should be a matter of consideration by every thinking citizen. To prevent San Diego harbor from becoming an open sewer, thereby protecting the health of the people, will mark an epoch in the progress of municipal government. Exactly the same conditions as formerly confronted the health authorities in New York are to be met with in the harbor of San Diego, and something must be done soon to put a stop to this serious menace to public health. Absolutely none of the sewage is carried out to sea by the tides and current because of the peculiar outline of the bay. It settles on the bay bottom and on the tidelands. A few days ago I took soundings at the mouth of the G street sewer and where there should have been 22 feet of water I found only 16 feet. The sewage is continually being deposited here and within a short time it will be sticking up above the water. Now is the time to handle this question for with the increasing deposits the problem of excavating and making the bay clean will become more and more costly."

### May Use Old Sewage Plant.

Altoona, Pa.—One of the plans now under consideration by the members of the city commission for meeting the sewage disposal problem, which now confronts them, is that of utilizing the plant at Creswell for the disposal of the sewage of the entire city. It is not improbable that an expert engineer will be brought here to make an examination of the system and of the lay of the land and advise them as to whether it is feasible. While this plant has generally been pronounced obsolete by engineers. Director Rooney and other members of the commission are not so sure that it is, and they point to the fact that it is doing the work, although grossly neglected for a number of years. Not all the land owned by the city is being utilized and there is no reason to doubt that a much larger volume of sewage could be handled there without difficulty, especially if a little effort should be made to keep surface water from running through the plant.

### Commend New Orleans Sewerage System.

New Orleans, La.—The sewerage and water systems of New Orleans are models and are among the great engineering feats of the time, was the opinion of trustees and engineers for the Chicago Drainage District, which controls and operates the great drainage canal of Cook County. J. Dailey, F. Breit and E. Kane, trustees, and J. L. Harrington and E. J. Kelley, engineers, have been in New Orleans three days, looking over the city's methods of handling the water supply and the sewerage, and have declared that they have found none better in the United States. Trouble with the United States Government has characterized the operation of the lake Michigan water supply for Chicago and led ultimately to a new method of disposing of the sewage and diverting it from the lake to the Chicago and Illinois Rivers and thence to the Mississippi at St. Louis.

### Has 48.53 Miles of Sewers.

Beverly, Mass.—Beverly has spent nearly a million dollars, $956,534.14, for sewer construction since 1892 and of this amount $63,413.89 has been expended last year. With the 1913 construction Beverly has 48.53 miles of sewers and of this total over two miles were built last year. The assessments levied up to the first of January of last year amounted to $293,228.64, or approximately 38 per cent. of the cost of the system, about five per cent. more than was figured would he returned when the system was adopted back in 1891. The figures are from the annual report of the city engineer, Harrie L. Whitney.

### Over Half Million For Storm Sewers.

Houston, Tex.—Since April 21, 1913, there has been a total of $587,701.24 worth of work done by contractors on new storm sewers alone in this city. Of this amount the City of Houston has paid out $488,721.04 for work already completed and still retains $98,980.04, or 20 per cent. of each total contract, as required by the charter to guarantee the work being done according to specifications. The total amount of storm sewer work completed and to be completed within the next few months aggregates $653,337.87.

### Take Over Sewage Plant.

Temple, Tex.—At a regular session of the city council arrangements have been perfected for taking over the property of the Temple Sanitary Sewer Company, recently purchased by the city, and which will hereafter be conducted under municipal ownership. The plant will be operated by the board of water commissioners with the present force of that department, and the expenses of operation will therefore be considerably lessened.

### Convicts Will Dig Sewers.

Huntington, Ind.—In the spring, after construction work has been commenced on sewers, no jail sentences will be given, but instead, prisoners will be compelled to work out their time on the sewers. Several sewers, such as the Webster street sewer, will be constructed during the coming summer. A great deal of the excavation will be through stone and prisoners forced to work in such sewers will find the work similar to serving a sentence on a stone pile.

### Typhoid Due to Clogged Sewer.

Walden, N. Y.—The monthly bulletin of the State Department of Health discusses at length the recent epidemic of typhoid here. It is asserted that the outbreak of the disease did not result from the milk supply, since no preponderance of cases was noted among children nor was the epidemic of an explosive nature. The bulletin then continues to show that the pollution of the water supply through sewage caused the spread of typhoid. The report in part read as follows:

"Inquiry developed the fact that along the first part of November there had been a heavy rainfall in this vicinity. A heavy rainfall took place on November 9. On this date the sewer on Orange avenue about 200 feet west of Station No. 1, became clogged and the sewage backed up through catch basins, house vent pipes, into neighboring cellars, and down across the land in the direction of the pumping station. Although driven through rock and with the tops protected by concrete, it is not at all improbable that at times of heavy rains, which affect the hydrostatic condition of the ground water, the wells at station No. 1 receive polluted water, strained to be sure, but not thoroughly purified bacterially. Unquestionably this happened on November 9, or immediately afterward, in such a way as to contaminate the water supply of the pumping station No. 1 with some of the sewage from the clogged Orange avenue sewer."

## WATER SUPPLY

### Earthquake Cracks Mains.

Gouverneur, N. Y.—The numerous breaks in the water mains about town are said by the water works superintend-

ent, D. H. Althouse, to be the result of the earthquake of February 10. There have been about half a dozen breaks in the water pipes, all occurring immediately following the quake. Because of the cold snap, it was naturally thought that frost had been the cause of the damage. On investigation this theory was not borne out, the mains not being frozen. On the other hand there were some indications that the breaks were due to the earthquake. A theory is advanced by some that the ground being frozen quite deep, the tremors would have more chance to wrench the pipes than when the ground was free from frost.

### Sand Filter Under Construction.

Erie, Pa.—One of the latest improvements which will give Erie, perhaps, the most efficient water works in the region of the Great Lakes, was realized in the installation of a great 20,000,000 gallon Bethlehem pump. At a test witnessed by Commissioner F. Schultz, Fire Chief McMahan and other officials, a satisfactory exhibition was given of the pump's capacity. The new filter house, now under construction, will be completed in about three months. The sand filter will be the only one of its kind along the lakes.

### Wants Liquid Chloride to Sterilize Water.

Trenton, N. J.—It is probable that a change will be inaugurated in the chemical treatment of Trenton's drinking water. Commissioner Fell is desirous of having the supply treated with liquid chloride, instead of with hypochlorite. To provide for this and other changes at the new filtration plant the Commissioners have been asked for an appropriation of $10,000. It is not believed that the entire sum will be required. Under the present system, it is contended by Commissioner Fell that it is impossible to make an even distribution of the chemical and much complaint results. Under the plan suggested by Mr. Fell the liquid would be mechanically introduced into the water.

### Water System Now Normal.

St. Joseph, Mich.—It has been announced at the pumping station that the permanent intake pipe had been thoroughly purged of all obstructions and water is now being pumped at full capacity. All danger from lack of fire protection has passed and after the system has been cleaned of all river and surface lake water, the supply will once more be fit for drinking purposes.

### City Water Plant in Commission Again.

Bluffton, Ind.—Bluffton has resumed its supply of water from the city water plant for the first time in several days, and the municipal light plant also is running. The combined water and light plant was put out of commission several days ago when a charge of dynamite, in a well the city was sinking, shattered the twelve inch pipe that feeds water to the boilers in the plant.

### Must Install Meters.

Keyport, N. J.—Steps for the enforcement of the amendment to the water ordinance, requiring all users of the borough water to install meters, have been taken, following the discussing of the question before the borough council a few weeks ago. Notices have been sent to those not having installed meters as yet, by the borough clerk, A. S. Van Buskirk, to the effect that meters must be purchased by April 1st. The meters must be bought from the borough at a cost of $8.40 each. All of these meters have been tested as to their efficiency and found satisfactory. The clerk advises that the reason for installing meters is not to increase revenue, but to eliminate the waste of water.

## STREET LIGHTING AND POWER

### Insure Lighting Plant.

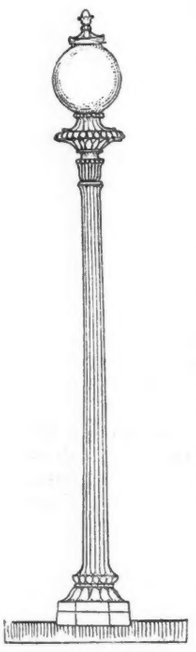
Richmond, Ind.—President Bavis of the board of public works has announced that the city has taken out $90,000 insurance on the municipal electric lighting and power plant, divided as follows: $27,000 on the building; $39,000 on general machinery, and $24,000 on electrical machinery. A rate of 68 cents has been obtained on the building insurance, 68 cents on general machinery and 83 cents on electrical machinery. The total amount of the premiums on this insurance will be $600 a year. The insurance on the municipal light plant is distributed among seventeen companies which have agents in this city.

### Lights Turned On.

Elizabethton, Tenn.—The turning on of the new lighting system of the beautiful Watauga Valley City of Elizabethton, Tenn., was one of the most memorable occasions in the history of that community. It was celebrated with an elaborate banquet at Linwood Hotel, where covers were laid for 120 guests. Mayor C. F. Carrie spoke in behalf of the city.

### Municipal Plant Pays One-third City Taxes.

Jacksonville, Fla.—Ohio citizens, who are urging the passage of a bill now pending in the state legislature, permitting the purchase by municipalities of public utilities and suspending the bond limit for bonds to be used for that purpose, have indicated as a good example of the profits to be derived from municipal ownership, the electric plant in Jacksonville. Since the inception of municipal ownership in 1893, the city has realized $1,800,000 on its investment, $1,200,000 having been spent in extensions and improvements to the plant, and $600,000 having passed into the city treasury for other activities. Notwithstanding these profits, substantial reductions were made in rates to consumers. The plant is managed by a bi-partisan board determined to run the people's plant on a business basis. A cut of $50,000 a year in the payrolls while doubling the output, since 1908, shows what a burden had been carried up to that time. The real success of the plant and its cuts in prices and large savings to the city started five years ago. During the current year, it is stated, one-third of the city taxes, amounting to $350,000, will be paid by the plant.



PRIZE POST DESIGN.

### Art Jury Passes on Lamp Post Designs.

St. Louis, Mo.—The accompanying design has recently won the first prize in a competition in St. Louis. The method of selecting designs for gas lamp posts is similar to the one in vogue in Philadelphia, where an art jury must first give its approval of a post before it is erected.

### Install Lighting System.

Crosby, Minn.—The main thoroughfare of this town has been greatly improved by the installation of the new

*Courtesy Duluth (Minn.) Herald.*
CROSBY'S GREAT WHITE WAY.

lighting system. It consists of posts, placed four in a block, bearing a cluster of five globes each. The accompanying illustration shows the artistic beauty of the posts and the brilliant light thrown by the lamps.

### Propose To Tax Poles Each Year.

Springdale, Ark.—Telegraph, telephone and electric light poles are to be assessed a tax of 50 cents each under an ordinance presented the city council of Springdale for the purpose of increasing the municipal revenues. There are nearly 600 poles in Springdale. Similar ordinances are under consideration in several towns in western Arkansas.

## FIRE AND POLICE

### Policemen Equip Gymnasium.

Charleston, S. C.—A gymnasium is being installed in the local police station without any cost to taxpayers. The movement for the gymnasium was started several weeks ago by several members of the second half of Squad A. In the western wing of their sleeping quarters on the second floor they have partly fitted up a gymnasium of their own. Whether this means that the local police will follow the plans of progressive departments in other cities in figuring athletics as good for the men and the department, is yet to be seen.

Chief Cantwell, it is understood, has no serious objection to the men using the little space that the gymnasium occupies in the building for a punching bag, and some other apparatus, which the men are slowly adding to their gymnasium.

### Police Use Card Index System.

Erie, Pa.—In order to facilitate the work in the department, Police Chief Detzel and Clerk Leuschen are installing a card index system similar to the Bertillion method, by which the department can keep track of Erie crooks, whether they are at liberty or behind the bars.

Under the new plan, every man or woman arrested in the city for a crime, will be booked and the record will show the disposition of the case and whether they were fined, imprisoned or released. If imprisoned the cards will show the date of their release so police and detectives can be on the lookout for them.

Speaking of this innovation, Chief Detzel said: "We certainly ought to have the Bertillion system in our police department, just the same as they have it in other cities, for we frequently receive requests from other cities for information concerning people we have arrested and we are unable to supply the data in a way we should. It would cost about $500 to install such a system, and as we are not liable to be given that money, we are figuring out a system of our own."

### Bloodhounds for Police Department.

Austin, Tex.—The county and city have ordered two man-trailing bloodhounds for the use of the Sheriff's and the police departments. The hounds come from the Rockwood kennels, Lexington, Ky., and are recommended as two of the best in the United States. The two will cost $250.

"We hope," said Councilman Anthony, "to save the people of Austin and Travis County many times this amount every month and to put behind the bars a large percentage of the criminals who commit burglaries and other crimes."

### Install Gamewell Fire Announcer.

New Orleans, La.—A new and very unique system of announcing the occurrence of a fire, for the benefit of the traffic squad of the police force in Canal street and advising the public of the location where any alarm may be sent from, will be inaugurated under the direction of City Electrician F. Olroyd. It will consist of a large horn, on the order of a shrill-toned fog horn, to be operated through the fire alarm system. This horn will sound the number of any box from which an alarm may be turned in, serving in the capacity of the old-time gong. Its tones can be heard many times as far as the old gongs and will be a warning to the traffic squad the full length of Canal street. It is what is known as the "Reacto" horn and is manufactured by the Gamewell Fire Alarm Company. The horn was tested before the members of the board of trustees of the Firemen's Pension and Relief Fund just before their meeting and created a great deal of interest, and, it is believed, will prove a success.

### Firemen Exempt From Eight Hour Law.

Olympia, Wash.—Members of the city fire departments are not within the scope of the state law prohibiting the employment of men more than eight hours a day on public works, according to a decision of the state supreme court in a case brought by Tacoma firemen, who sought to compel the city commission to install a three-platoon system by invoking the eight-hour law. The supreme court holds firemen are not laborers; are not engaged upon public contracts and are not paid by the day. The firemen complained that they were compelled to be on duty twenty-one hours a day and alleged that although receiving warrants only once a month, they were really paid upon a daily basis.

### Foam Squelches Fires.

Vienna, Austria.—The fire department here has made very satisfactory tests in squelching ignited explosives by means of a layer of thick foam. The foam is produced by a stream of water through a special apparatus, eight inches in diameter and eighteeen inches in length, attached to any hose. The fire is instantly killed by the foam, which forms over the burning mass, a layer impervious to air. At a recent fire a large cylinder of combustible gas had exploded, setting the premises aflame. Within five minutes on application of the foam extinguished the blaze.

## MOTOR VEHICLES

### Will Receive Knox Engine.

Schnectady, N. Y.—Fire Chief Yates has been informed that the new motor-driven Knox combination truck, engine and hose wagon for No. 8 fire station is ready at the works of the Knox Automobile Company, at Springfield, Mass., and will be shipped soon. The new apparatus is the latest model and will give the Ninth and Tenth wards two gasoline engines, with one now at No. 7 station, in Bellevue. It will also give these two wards two hose and chemical wagons, the new one being equipped with ladders and other appliances such as are used on a fire truck. The new apparatus will be here on two weeks' trial and the company will send a man with it to instruct the Schenectady firemen in all of its details.

### Install Ahrens-Fox Machine.

Washington, D. C.—Another step in the motorizing of the District of Columbia fire department has been taken when two self-propelled fire pieces were installed in No. 16 engine company, on D street, near 12th, northwest, replacing the company's entire equipment of horse-drawn apparatus.

The pieces installed are a combination chemical and hose wagon, weighing 8,500 pounds, and an engine weighing 15,000 pounds. The former cost $5,900 and the latter $9,000. The engine is capable of displacing 700 gallons of water to the minute. Both wagons are geared so as not to exceed a speed of thirty miles an hour. They are built by the Ahrens-Fox Fire Engine Company of Cincinnati, Ohio.

### Accept American-La France Engine.

Bonham, Tex.—The American-La France Company has shipped its new auto truck which has been satisfactorily tested. Mr. C. R. Rayons, representative of the company, claimed that the machine could develop 75 horsepower and make 50 miles an hour. It cost the city $5,500.

## GOVERNMENT AND FINANCE

### Commission Adopts New Charter.

Columbus, O.—The Columbus Charter Commission, which has been at work nearly a year on a new charter

for the city, has adopted one to be submitted to the voters for their approval. It provides for a council of seven members elected at large for four-year terms—the members to be paid $1,000 a year for their services, but to be deducted at the rate of 2 per cent. for each meeting missed and five successive absences to operate as a removal from office. The president of the council is to be in line for succession as mayor on his death, removal or resignation. The council is to elect the city treasurer. The initiative and referendum is provided for the legislative acts of council, 6 per cent. petitions being necessary to initiate and 12 per cent. for the referendum. The mayor who is an elective officer is to be paid $5,000 a year. His duties and powers are about as they are now under the federal plan. The city atttorney is to be elected for four years. Likewise the city auditor. Council is to fix the salaries of these subordinate officers. Departments of safety and service each with five divisions are created—the heads to be appointed by the mayor, under the ordinary civil service rules. The mayor is to name the three civil service commissioners, but council must confirm. Candidates for council may be nominated only by non-partisan primaries, but other elective city offices may be nominated at the regular party primaries. The Massachusetts non-partisan ballots are to be used for all elections. Any official may be recalled upon vote on the filing of a petition signed by 1,000 voters with the city clerk. The charter is to take general effect January 1, 1916.

**Mayor Compliments City Purchasing Agent.**

Atlanta, Ga.—That the city purchasing agent, W. E. Chambers, saved more than enough money on the purchase of supplies during January to pay his salary and the other expenses of his department for the whole year, and that the saving effected by the purchasing agent for the year will run between $30,000 and $40,000, was the opinion expressed by Mayor Woodward. "A purchasing agent is something the city has needed a long time," said the mayor. "By watching the purchase of supplies closely last year I saved the city, in my honest opinion, around $20,000. But to exercise proper care in buying supplies it was necessary for the comptroller's office to neglect other work equally as important. Hence a purchasing agent was needed, and council, toward the close of last year, passed an ordinance creating the position and defining the purchasing agent's duties and powers. The department saved enough in January to pay its expenses for the whole year, and I believe the total saving for the year will run in the neighborhood of $40,000."

**Manager for Wisconsin City.**

Horicon, Wis.—Horicon is the first city in Wisconsin to copy Dayton's plan of installing a municipal manager to have entire charge of city affairs. The new official will be called the city auditor, and though other city officials are retained because of charter provisions, their duties will be limited in future to the routine signing of papers. The city, with a population of 2,500, will pay $1,000 to a man who will devote his entire attention to this work. The plan was adopted because the other officials wanted their pay raised.

**To Vote on Framing New Charter.**

Seattle, Wash.—The citizens of Seattle will consider, on March 3, the proposition of electing fifteen freeholders for the purpose of framing an entirely new charter. If the freeholders are chosen, the charter, which will be devised at their sole discretion, will be submitted within ninety days for the approval or rejection of the voters. At present Seattle is governed under the councilmanic form, and, as City Comptroller J. G. Agnew informs us, it is impossible to state what its future government will be, should a new charter be accepted.

**Vote for Commission Government.**

Lafayette, La.—The election for government by commission has resulted in victory for the advocates of the measure, the vote standing 324 and 278 against, a majority for of forty-six. Naturally the proponents of commission government feel much elated and are confident that the new plan will work out for the town a thoroughly businesslike and progressive administration. The new scheme of government will not go into effect until the end of the present adminstration in May, next year.

**Will Vote on Employing Purchasing Agent.**

Tacoma, Wash.—A resolution, placing a charter amendment before the voters at the spring election, which would authorize the Council to employ a central purchasing agent, has been adopted by the Council. The commissioners do their own purchasing now.

**Successful in Selling Bonds Over Counter.**

St. Paul, Minn.—St. Paul's experience in marketing city bonds in $10 amounts, drawing 4 per cent. interest, and redeemable at any time for principal and interest at that time, has caused widespread attention. St. Paul's successful experiment keeps $600,000 interest money at home, which ordinarily would go to the Eastern bondholder. The plan will be tried in other cities in the near future, it is predicted.

## STREET CLEANING AND REFUSE DISPOSAL

**City May Buy Garbage Disposal Plant.**

Johnstown, Pa.—Council has held a conference with officials of the People's Garbage & Fertilizer Company, from whom the city rents the garbage disposal plant in the Seventh Ward. The owners have been asked to submit a proposition to the city, anticipating the expiration of the existing contract in June. At the present time Johnstown pays the People's Company $150 per month for the use of the plant. The city's own employes operate it, and up to the present time Dr. G. Hay, as Health Officer, superivsed the operation of the plant. Dr. Hay's careful study of the problem of garbage disposal, and the attending feature of economy in operation, is generally admitted to have made the municipal operation of the plant under a lease a decided success. It was reported following the meeting that the People's Company was asked to submit a figure looking to the purchase of the plant by the city.

**Snow Removal Costly.**

Rochester, N. Y.—The heavy snowstorm which visited this city recently cost Rochester about $3,500 to clean up the snow from the down town streets. That estimate was made by Commissioner of Public Works H. W. Pierce, who said that not in several years was it necessary to employ so many men on the streets. About 300 extra men were added to the force of snow cleaners, bringing the total up to 515. Commissioner Pierce put to work about 75 extra wagons, and in addition, the New York State Railways had about 100 men and about 30 wagons on the job. It is estimated that about 3,000 loads of snow have been carted from the streets and dumped from the various bridges into the river and the canal, making about 15,000 cubic yards, as each wagon contains five cubic yards.

Hartford, Conn.—Superintendent of Streets L. F. Peck added men and teams to his forces and increased the outlay to $750 a day to remove the snow from the recent blizzard. The department has seventy-five teams at work, and, with the seventy-five drivers, has now 250 men engaged in the work. The entire expense of removing the snow will be between $6,000 and $7,000.

**Retaliate by Piling Snow on Tracks.**

Passaic, N. J.—Commissioner Reid of the Street Department has ended a controversy with the Public Service Corporation when he set 100 men at work piling snow upon the tracks on which the trolley cars run. The Public Service Corporation, after the recent storm, had thrown the snow removed from the tracks to the adjoining roadways. In many places this snow was three feet deep.

## RAPID TRANSIT

**Device to Fill Gaps Between Stations and Cars.**

New York, N. Y.—The gaps between subway express stations and car doors, caused by the curve shape of the stations,

have been a source of great annoyance and often, of accidents to passengers. A gap-filling device has been perfected which the transit company describes as follows:

"When ten-car trains are in service the passenger station device operator takes his stand at a point where the forward end of a ten-car train is expected to stop, and an instant or two before the train comes to a stop he moves his controller handle to the operating point. This energizes the electrical magnets that admit air to the air cylinders. The operation of those cylinders projects a grated segment of the station platform to match up or suit each door wherever a gap obtains, thus placing a gap-filling device to cover the place between the cars and station platform before the cars come to a stop. This grated segment is maintained in a level plane, so that when it is moved to its outward position, it in nowise affects the natural movement of the embarking and disembarking passengers. This grated gap-filling segment remains in the outward position until the train has proceeded a distance of some seven or eight feet on its outward journey, when, through the action of the moving train and an automatic reversal of the electro-pneumatic cylinder action, the grated segment recedes under the station platform.

### Ask City to End Car Strike.

Hazelton, Pa.—A demand has arisen that City Council do something to bring about an end of the local trolley strike, which is now in its seventh week, during which, not one car has been run on the lines. It is claimed that the Council can force the company to operate. A. Markle, president of the Lehigh Traction Company, insists that he will not consider any settlement that includes reinstatement of the five members of the grievance committee. The wage issue is not paramount and could be adjusted within a day. The union maintains that there can be no termination of the strike, so far as its members are concerned, that does not provide for the continuance of the grievance committee in the service.

## MISCELLANEOUS

### Has Two Municipal Abattoirs.

Seville, Spain.—The sale of meat to the public in Seville is regulated by the municipality, which directs the slaughter of animals for food and approves retail markets where meat may be sold to the consumer. There are now two municipal abattoirs in the city, one for the slaughter of bovines, sheep, and goats, and the other for swine. In the former a force of some 40 persons is employed, and in the latter 29. Both these slaughterhouses, however, are soon to be superseded by a new building in course of construction. The new abattoir will have an area of 44,000 square metres (473,616 square feet) and will cost about $450,000, inclusive of equipment. In the plans have been incorporated all installations and improvement that may be found in other modern abattoirs and a few original features demanded by logical exigencies. The slaughter of swine is to be carried on in a series of departments separate and distinct from those devoted to the slaughter of bovines and sheep. Besides these series of essential departments, there are to be cooling and refrigerating rooms, and departments for filtering the blood, melting the fat, and selecting the tripes; other departments for cremating the flesh of diseased cattle, for drying and salting the skins; and stables, sties, and corrals for the live animals with granary and storehouse for straw.

### Exposition Will Interest Municipal Officials.

San Francisco, Cal.—The Panama-Pacific International Exposition promises to be of great interest to municipal officials. Methods in storing and distributing water will be given adequate presentation, as will the display of equipment for city sanitation. There will also be exhibited methods and equipment for the construction of city, suburban and country roads. The maintenance of roads will complete this division of the exhibition, which, it is asserted, will be more thoroughly exploited than it has been at any other world's exposition.

### To Regulate Tree Planting.

Provo, Utah.—Mayor C. F. Decker is planning to make Provo the most beautiful city in the west. Already the city commissioners have passed ordinances condemning cottonwood and similar trees and in place the mayor wants to plant trees of a uniform kind. To accomplish this he will present an ordinance setting apart certain streets for certain kinds of trees. Among the trees to be planted are white ash, soft maple, Norway sycamore, American sycamore, English sycamore, sycamore maple, blue ash and a few other varieties. These trees are to be planted uniformly and each street will have the same kind running from one end of the city to the other. The plan has already met with popular favor.

### Municipal Oil Pit Profitable.

Pasadena, Cal.—Pasadena's most unique municipal venture, its road oil pit, is proving a remarkable success and fully living up to the predictions made by Former Mayor Thum and Former Councilman Rhodes, who inaugurated it. Commissioner Allin has the pit in charge and so successful has it been that he is planning extensions, notable in size, to increase its capacity. He would have cut down the price of oil for street purposes had it not been for these planned extensions, but even at that a lot of money is saved street improvers by the city department. On June 30, of last year, the department had on hand, $750.95 worth of oil and during the next six months it purchased $4,843.45 worth of oil. On December 31, last, it had on hand $832.70 worth of oil. In the six months the revenue was $8,036.74 and the city made a profit of $2,434.71, in addition to saving money for street improvers and giving the contractors oil when needed. There are still outstanding accounts of $2,333.41, and it cost but $840.33.

### Approves Publicity Bureau.

Philadelphia, Pa.—Efforts to have Councils appropriate funds for a municipal publicity bureau, through which the advantages of Philadelphia as a convention city might be exploited, have been given impetus by M. L. Cooke, Director of the Department of Public Works, when he indorsed the suggestion and promised his support. According to Director Cooke the establishment of a publicity bureau would be an excellent thing, even though its activities were not directed toward procuring conventions. Such a channel, through which the city could be advertised nationally and even internationally, would, according to the sponsors of the suggestion, bring Philadelphia into the limelight, because of its large and varied interests, with the result that businesses of all kinds would benefit.

### Boom City With Huge Electric Sign.

Oil City, Pa.—The Oil City Chamber of Commerce has secured permission from the board of county commissioners for the erection of a monster electric sign on the top of the new Petroleum bridge. This sign will be 40 feet long and 10 feet in height and triangular in shape so that it will be visible from all trains coming into Oil City at night. It will be lettered with the city's slogan "Oil City Offers Opportunity" or some other appropriate wording telling of the city's advantages.

### Chicago Playground Ends Third Year.

Chicago, Ill.—On Washington's Birthday, West Park No. 2, known as Stanford Park, celebrated the close of its third year of play—a very busy year of genuine social recreation as is shown by a perusal of the director's brief page of statistics. There was a total attendance of 759,116 persons, 2,400 of whom organized into clubs; 68,000 used the reading room, and 128,000 the swimming pool. These numbers can be, as Director Teller advises, interpreted only in terms of "justice, neighborliness, democracy, good citizenship and brotherhood."

### Order Municipal Market Illegal.

Grand Forks, N. D.—North Dakota municipalities, under their corporate charters as established by the state legislature, are not permitted to establish meat markets and similar retail enterprises, according to an opinion filed with the city council.

It is the result of a petition to the council that it establish a municipal meat market in connection with the recently constructed municipal abattoir.

### 1,500,000 Trees to Be Planted in Nebraska.

Lincoln, Neb.—The biggest tree-planting crusade in the history of the state is about to be launched on the Loup division of the government forest reserve at Halsey, Neb. Within the next four to six weeks 1,500,000 trees will be planted.

# LEGAL NEWS

## A Summary and Notes of Recent Decisions—Rulings of Interest to Municipalities

### Assessment—Collateral Attack.

Brock v. City of Decatur et al.—A special assessment for a municipal improvement, as provided by Code 1907, is a final judgment which can be reviewed only by an appeal seasonably taken in accordance with sections 1389-1399, and cannot be collaterally attacked by a proceeding in chancery on the ground that the assessment is in excess of benefits.—Supreme Court of Alabama, 64 S. R. 73.

### Special Assessments—Authority Strictly Construed.

City of Gainesville vs. McCreary—Authority given municipalities to impose taxes and special assessments for municipal improvements should be strictly construed, especially when it adversely affects the rights of property owners to be fully advised of the burdens to be put upon them; and any material departure from the express authority is fatal to the special assessment.—Supreme Court of Florida, 63 S. R. 914.

### Junk Shops—Regulations—Validity.

City of Milwaukee v. Ruplinger.—A municipal ordinance prohibiting the keeping of junk shops without authority, and providing that all applications for licenses shall be made to the mayor, who may grant or refuse to grant such licenses as he may deem best for the good order of the city, is not invalid as an unauthorized delegation of legislative power, for the ordinance is complete in itself, fixing the license fee, but merely delegating to the mayor the right to determine, in the exercise of his official discretion, the persons who may come within its terms.—Supreme Court of Wisconsin, 145 N. W. R., 42.

### Assessments—Statutory and Charter Provisions.

Bass v. City of Bangor.—Rev. St. authorizing cities to assess lands benefitted by the widening of streets, was a general law, and did not repeal Bangor City Charter, inclusive, relating to the same subject, under the rule that a general statute will not repeal the provisions of a city charter, though in conflict therewith, unless the words of the general act are so strong and imperative as to render it manifest that such was the intention of the Legislature.—Supreme Judicial Court of Maine, 89 A. R., 309.

### Contract for Discovery of Taxable Property.

City of Richmond vs. Clifford.—A city may contract with a private person to search for property which has been secreted or omitted from taxation, and report the discoveries to the clerk of the city, to be by him entered on the tax duplicate, notwithstanding the Tax Act of 1891, which abolishes the office of city assessor, but which does not impose on county auditors, county treasurers, city clerks, or city treasurers the duty to search for omitted property, but such duty is imposed on county assessors, at least to the extent that the omission is disclosed by the public records of his county. Supreme Court of Indiana, 103 N. E. R. 789.

### Sewer Contracts—Application of Payments.

City of Boone v. Gary et al.—Where the contract for the construction of a sewer reserves to the city the right to retain the money due for payment of claims for labor and material, such claims could not be defeated by an assignment by the contractor of his earnings thereunder to secure money borrowed, so that the city could deposit the amount due the contractor in court, to permit a payment of claims for labor and material after having adopted a resolution to withhold further warrants on the contract, in order to pay labor and material claims; the rights of materialmen not depending on a compliance with Code, § 3102, relating to the claims of subcontractors furnishing materials for public improvements.—Supreme Court of Iowa, 144 N. W. R. 709.

### Warrants—Interest—Contracts.

Alabama City, G. & A. Ry. Co. v. City of Gadsden.—A resolution of the mayor and aldermen that interest-bearing warrants be issued to plaintiff lighting company whose claims were past due, which was entered in the minutes and carried into effect by the clerk's interlineation of the provision for interest in the then outstanding warrants, is to be construed as an agreement to pay interest in consideration of plaintiff's continuing to furnish light to the city.—Supreme Court of Alabama, 64 S. R., 91.

### Injuries—Notice—Proof—Nonsuit.

Bostwick v. City of Griffin.—Under Civ Code 1910, no person having a claim for money damages against a municipal corporation of this state, on account of injuries to person or property, shall bring any suit against the municipal corporation for the same without first presenting in writing such claim to the governing authority of the municipality for adjustment, stating the time, place, and extent of the injury as near as practicable, and the negligence which caused the same, and no such suit shall be entertained by the courts against such municipality until the cause of action therein has been presented for adjustment. Where, in an action for personal injuries against a city, compliance with the statute is alleged, and such allegation is denied by the city, it is a necessary part of the plaintiff's case that he prove compliance with the statute, and, on failure to show substantial compliance therewith, it is not error to grant a nonsuit.—Supreme Court of Georgia, 80, S. E. R., 657.

### Telephones, Experimental Rates.

In Re City of Louisville, Kentucky, Petitioner.—A decision of the Federal Supreme Court which reversed, "without prejudice," because the evidence of confiscation was not so clear as to dispense with the test of actual experiment, a decree of a district court enjoining the enforcement as confiscatory of a municipal ordinance fixing telephone rates and remanded the cause for further proceedings not inconsistent with its opinion, gives the district court a discretion to retain the case for an actual experiment with the rates, which discretion was not abused by a subsequent order appointing a special master to ascertain and report the gross earnings, gross operating expenses, and net income of the telephone company after the rate ordinance went into effect, where an actual experiment had been voluntarily undertaken after the Supreme Court's action, and had been in effect for more than eight months before such order was entered, 34 S. C. R., 255.

### Streets—Change of Grade—Action For Damage.

Flitcraft vs. Mayor and Common Council of Borough of Woodstown.—General Road Act provides that an action shall lie by any owner of a building erected upon any street the grade whereof shall be altered by any borough, to recover damages from such alteration, and section 72 provides that the provisions of section 70 shall not refer to any borough whose charter provides for paying compensation to persons injured by the making of grades. Defendant borough was incorporated under the General Borough Act of 1897, section 33 of which authorizes the borough council to alter street grades and provides that the costs of the "improvement" shall be assessed upon the abutting lands to the extent of the benefit received. Section 52 provides for the appointment of commissioners of assessment, who shall make all assessments in favor of the owner of the land damaged by any improvement, and section 60 requires that the damages assessed for the landowner shall be tendered to him unless the benefits equal the damages. Held, that where the street grade was changed by a borough acting under Act March 27, 1905, providing for the permanent improvement of the state public roads, and not under Borough Act of 1897, section 72 of General Road Act applied, so that an injured property owner could not sue at large for damages, but must follow the remedy provided by the Borough Act, which is to sue out mandamus to compel the commissioners of assessment of the borough to assess the damages if they refuse to do so on demand.—Supreme Court of New Jersey, 89 A. R. 254.

# NEWS OF THE SOCIETIES

### Calendar of Meetings.

February 26-27.
INDIANA SANITARY AND WATER SUPPLY ASSOCIATION.—Seventh annual meeting, Hotel Severin, Indianapolis, Ind. Dr. W. F. King, Secretary, Indianapolis.
February 26-28.
HIGHWAY ENGINEERS ASSOCIATION OF MISSOURI.—Annual Meeting, St. Joseph. Ray L. Gargill, secretary, St. Joseph.
March 9-11.
ILLINOIS WATER-SUPPLY ASSOCIATION.—Annual Meeting, Urbana, Ill. Edward Bartow, secretary, Urbana.
March 12.
VERMONT SOCIETY OF ENGINEERS.—Annual Meeting, Burlington, Vt. George Reed, secretary, Barre.
MARCH 16-17.
ARKANSAS ENGINEERING SOCIETY.—Third Annual Meeting, Pine Bluff. P. B. Hill, secretary, Little Rock.
April 16-17.
TRI-STATE WATER AND LIGHT ASSOCIATION.—Annual Convention, Atlanta, Ga. F. C. Wyse, assistant secretary, Columbia, S. C.
May 11-15.
AMERICAN WATER WORKS ASSOCIATION.—Thirty-fourth Annual Meeting, Philadelphia, Pa. J. M. Diven, secretary, 47 State street, Troy, N. Y.

### National Conference on Concrete Roads.

The first conference was held in Chicago, Feb. 12-14, over three hundred engineers and officials interested in road building being present. The papers as given in the program published in the Municipal Journal were read at the sessions which were well attended. Committee reports were received and discussed on the following topics: "Contraction and Expansion of Concrete Roads," "Aggregates for Roads," "Preparation and Treatment of Subgrade Reinforcement."

Towards the close of the meeting resolutions were passed favoring the holding of another congress next year. The report of the committees and the papers were also summarized as conclusions of the congress. Very briefly abstracted these were, as follows:

1. The aggregates should be clean and hard.
2. The sand should be coarse and well graded.
3. A rich mixture should be used.
4. The materials should be correctly proportioned.
5. The materials should be thoroughly mixed.
6. The inspection should be intelligent and thorough.
7. When in doubt the pavement should be reinforced.
8. The subgrade should be of uniform density, thoroughly compacted, and drenched with water immediately before placing concrete.
9. The concrete should be of a viscous, plastic consistency.
10. After placing the concrete should be immediately covered and kept moist, and not opened to traffic for four weeks.

Some of the important or original points brought out in the course of the meeting follow:

The committee report on "Aggregates," after giving five simple rules covering the most essential requirements, rules which do not differ much from any rules that specify the requirements of the highest grade of concrete, stated that if local conditions prevented the following of any one of these rules, it would be better to choose some other form of pavement.

The committee report on "Subgrade" called attention to the mistaken opinion of some engineers that a concrete pavement would bridge over soft or uncompacted places in the subgrade. On the contrary, it was the opinion of the committee that the subgrade should be rolled and compacted with as great care as is ever given to it in the construction of any pavement.

The Committee on Contraction and Expansion of Concrete Roads reported, as results of tests made by the Bureau of Standards on an experimental road at New Village, N. J., that the expansion and contraction of concrete roads is due more to changes in moisture content than to changes in temperature. The maximum expansion of a road was found to be in April and the minimum in August. The committee also recommended a slight dishing of the subgrade as tending to prevent longitudinal cracks in the center of the road.

The Committee on Proportion and Consistency of Materials reported that the amount of water used should be such as to make the concrete plastic and still retain its shape, such as is commonly called a quaking mixture.

### Lincoln Highway Association of Colorado.

The annual meeting was held at Colorado Springs, February 11. More than 50 delegates representing 13 counties, took part in the sessions. In addition to the delegates there were several visitors representing highway associations in other states, among them C. F. Adams, Chillicothe, Mo., president of the Hanibal and St. Joe Across State Highway Association. A temporary association known as the Pikes Peak Ocean to Ocean Highway Association was formed, or as the Central Transcontinental Highway Association. The purpose of this association is to promote a transcontinental highway which would include the Pikes Peak route on its Colorado link. The following officers of the Lincoln association were chosen:

Austin Gavin of Glenwood Springs, re-elected president, and A. W. Henderson, of Colorado Springs, was re-elected secretary-treasurer. The following were elected directors of the association in the counties: Dr. O. S. Neff, S. H. Yale and J. R. Rouze, Kit Carson; Frank Tompkins, R. R. Lucore and Charles S. Hamilton, Lincoln; Charles E. Bruce and J. L. Rector, El Paso; James Mickens, J. M. Dougherty and O. S. Mason, Chaffee; T. D. Kyle, James W. Clark and Burt Crosby, Lake; J. W. Deane, S. I. Silvius and A. J. Lof, Pitkin, L. R. Willits, T. J. Dice and Jess Sherman, Eagle; E. McLearn, H. R. Logan and W. H. Haley, Garfield; Frank Sheridan, Thomas Ulduff and W. S. Montgomery, Rio Blanco. Directors in the remaining counties, Elbert, Teller and Mesa, will be appointed later.

### League of California Municipalities.

For the better co-operation of San Francisco and neighboring communities in matters of local government, the bay cities' branch of the League of California Municipalities was organized last week at a meeting in the chamber of the Board of Supervisors, the following officers being elected: President, Mayor Frank K. Mott, of Oakland; first vice president, Mayor G. J. McGregor, of Burlingame; second vice president, Mayor Frank Otis of Alameda; secretaries, H. A. Mason, of San Francisco, and William J. Locke, of Alameda.

City Attorney Percy V. Long, who is president of the League of California Municipalities, called the gathering to order, and brief addresses were made by Mayor Rolph, J. D. Phelan and former Mayor Taylor.

The speakers pointed out that concerted action would produce good in handling the traffic of this port, the benefits of which would be shared by the whole bay region, and in developing the Hetch-Hetchy system, which would supply all the cities hereabouts as well as San Francisco with pure water for all time.

Membership in the organization is to be open to representatives of all cities and towns in the counties bordering on San Francisco bay and such others as wish to affiliate. The membership fee was fixed at $1 a year. It was estimated that forty-five municipalities would join.

Two standing committees were named, one composed of the city attorneys belonging to the organization, headed by City Attorney B. D. Max Greene of Antioch, and the other composed of the city engineers, with J. J. Jessup of Berkeley as chairman.

### National Efficiency Exposition and Congress.

The first National Efficiency Exposition and Conference will be held in the new Grand Central Palace, New York City, from April 4 to 11 under the auspices of the Efficiency Society, Incorporated. The exhibits will show the increasing application of scientific methods to modern conditions, and there will be assembled displays of appliances, methods, and products in the fields of industrial, mechanical, governmental, educational, and household efficiency. Special invitations to participate in the conferences to be held during the exposition will be issued to scientific organizations, state and municipal officials, and authorities on efficiency.

Among the exhibitors will be the New York Telephone Company, the Public Service Commission of New York, the Bush Terminal Company, the Interborough Rapid Transit Company, the Equitable Building Corporation, the General Acoustic Company,

Thomas A. Edison, Inc., the New York Edison Company, the Remington Typewriter Company, the Burroughs Adding Machine Company, the Cowan Truck Company, the Edison Storage Battery Company, and the General Vehicle Company.

### West Virginia Good Roads Association.

One hundred enthusiastic delegates attended the first annual roads meeting at the university, Morgantown, W. Va., Feb. 10, and three interesting sessions were held on the opening day.

The school was opened with an address of welcome by Dr. Thomas E. Hodges, president of the university, who extended the visitors all the privilges of the institution. Dr. Hodges said: "We want you to feel that the entire university and all the faculty are at your command and we would appreciate it if you will call on us for any assistance you may want. The university belongs to the state and as citizens of the state it belongs to you. It is at your disposal for the next two weeks."

A. Dennis Williams, state road engineer, then spoke on "West Virginia Roads and First Needs." Emphasizing the fact that every material necessary to make good roads was to be found in abundance within the state, he made appeal for systematic construction and stated that much energy in that direction was being misplaced under the present system. This evening M. O. Eldridge, U. S. highway engineer, delivered an instructive address in which he urged the organization of forces throughout West Virginia and concentrated efforts in rebuilding West Virginia roads.

This evening the West Virginia Good Roads Association met and organized by the election of the following officers: President, ex-Gov. W. A. McCorkle, Charleston; vice president First congressional district, H. S. Gray, Cameron; second, W. G. Brown, Kingwood; third, O. O. Cooper, Hinton; fourth, Burdett Woodyard, Parkersburg; fifth, L. D. Guthrey, Huntington; secretary, State Road Engineer A. D. Williams; treasurer, Senator Gray Silver. The directorates will be composed of fifty members, which include the president of each county association. A resolution was adopted governing distribution of the state automobile tax among the various counties to be used in improvement of roads therein.

### Engineers' Club of Philadelphia.

At the thirty-fifth annual meeting at the clubrooms, 1317 Spruce street, President Taylor presented facts illustrated by diagrams of the development of the club. The president then presented a paper on the Street Cleaning Problem in Philadelphia, illustrated with lantern slides and depicting the intricate problems to be solved in placing this part of the municipal work on a scientific basis.

The secretary presented the report of the tellers of the election of officers which was unanimously approved as follows: President, S. M. Swaab; vice president, J. A. Vogleson; secretary, Henry L. McMillan; treasurer, J. Reese Bailey; directors, J. M. McAndrews, E. J. Dauner, Fred C. Dunlap, Henry Hess. The next smoker will be held February 28.

### League of Third Class Cities of Pennsylvania.

Members of the league already realize that the fewer men now serving in councils will be anxious to learn every plan in operation in order to improve their own department at home. It is believed that entire councils will attend the conventions instead of delegates, as has been the custom of the past.

A new feature of future gatherings is expected to materialize when superintendents of respective departments will gather and hold special sessions to discuss the affairs of their separate departments. Superintendents of Accounts and Finance will each tell of the plans whereby bookkeeping is carried on in their respective cities; public safety men will relate how they have handled affairs; superintendents of streets will talk sewers and paving methods of the modern type; superintendents of parks and buildings will do likewise, while mayors will talk over powers of the public affairs department.

Every councilman and mayor who expects to make good will be anxious to attend and rattling good conventions are predicted. Fred Gates, city clerk of Wilkes-Barre, is secretary of the league and is already busy answering questions for the next convention. He is also collecting data for the same.

### Highway Engineers' Association of Missouri.

The annual meeting will be held in St. Joseph March 18-20.

Ray L. Cargill, the secretary of the association, is also a member of the program committee, the other members being W. L. Heckman of Independence, and Howard H. Shiskey of Richmond.

Among the entertainment features will be a banquet and an auto ride over city and country roads.

The coming convention is looked upn as the most important yet held in boosting the good roads movement in Missouri. The plans for connecting roads between all county seats of the state, and of cross state highways, of which the St. Joseph-Hannibal road is one of the most important, will be taken up. Buchanan county is now preparing to improve this road to the east county line, a distance of about twenty miles.

When the convention opens the morning of March 18, there will be addresses of welcome, and a response by Alfred Riske, president of the association. An address will be given by F. W. Buffum, state highway commissioner of Missouri, on road work in the state.

At the afternoon session there will be an address on "Reinforced Concrete Arches and Other Masonry," by Daniel B. Luten of Indianapolis, an expert on cement work. A. A. Maitland of Kansas City will speak on "Economical Highway Bridge Construction."

The morning session of March 19 will be opened by a paper by a federal government expert on "Earth Road Construction." There will also be a paper on "Permanent Road Construction," by William Elbring, highway engineer of St. Louis. During the afternoon there will be a banquet at which members of the state board of agriculture will make addresses.

The morning of the closing day will be given over to road work discussion. F. B. Mumford, dean of the state college of agriculture, will speak on "Farmers' Need of Good Roads," and J. Kelley Wright of the state board of agriculture, will also speak. There will be a paper on "Comparison of Road Machinery and Traction Power."

During the afternoon, R. W. McCurly of Independence will speak on "Good Roads Day in Jackson County." There will be a discussion of this paper, as well as the one on "The County Surveyor, His Duties and Difficulties," by A. V. Pollak, county surveyor of Iron county.

### North Dakota Society of Engineers.

The sixth annual convention was held at Fargo, February 16. H. F. Emery, president of the city commission, made the address of welcome and W. A. Baker, president of the society, responded. The following officers were elected: T. R. Atkinson, Bismarck, president; H. C. Frahm, Minot, and F. L. Anders, city engineer, Fargo, vice president; Prof. Chandler, secretary treasurer.

Among the papers presented were the following: "Oil Roads," by L. R. Grifford, assistant city engineer, Manhattan, Cal.; "Municipal Improvements," F. L. Anders; "Pavement Construction," J. C. Van Dorn, Minneapolis; "Deep Sewer Work at Minot," J. R. Graham, assistant city engineer, Minot; "Commercial Water Softening," H. G. Lykken, city engineer, Grand Forks; "Flat Slab Concrete Construction," Eric Martinson, Minneapolis.

### American Society For Fire Prevention

This new society was organized at a meeting at its offices, 51 Chambers street, New York City, February 11. Abram W. Herbert was chosen director of safety of the society. The advisory board consists of E. A. Weimer, president, Pennsylvania State Building Code Commission; R. P. Bolton, C. G. Armstrong, H. S. Kissam, J. P. Whiskeman, F. C. Mott, F. A. Forgee, consulting engineerings; Woodruff Deming, architect; John Mitchell, chairman Committee on Trade Agreements, National Civic Federation; David Belais, president Humane Society; F. H. Kimball, architect; Joshua Strong, president American Institute

(Continued on Page 29.)

# NEW APPLIANCES

## VALVE OPERATING DEVICE.

### Mechanism Attached to Automobile Wheel Opens and Closes Large Valves.

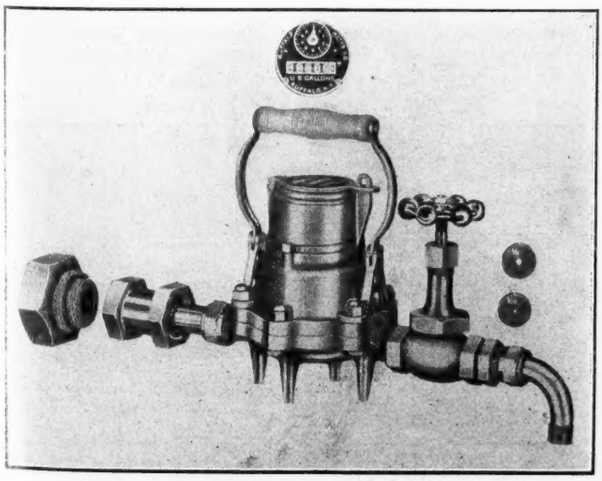
The Water Works Equipment Co., New York City, will soon place on the market a valve operating device, an invention of W. H. Van Winkle, which was recently given a successful trial in Trenton. Power for turning the valve stem is obtained from the driving wheel of an automobile, which is raised from the ground and placed about ten feet from the valve box. By means of a suitable device a horizontal telescoping shaft is fastened to the hub of the wheel. The other end is supported by a framework over the valve box. This shaft is connected through bevel pinions to a vertical shaft having a socket over its lower end, which grips the valve stem.

A successful demonstration of the machine was recently given on a twelve inch valve at Prospect street and Pennington avenue, Trenton, N. J. The water pressure was turned off in a minute and forty-five seconds and opened again in about the same time. The job would probably have taken the time of three or four men for half an hour, working by hand. The demonstration was made by Mr. Van Winkle in the presence of Alvin Bugbee, superintendent of the Trenton water works; Charles Cummings, a mechanical engineer of New York, and Edmund T. Scott, formerly of the Trenton Water Works, but not a representative of the Water Works Equipment Company.

The advantage of a superintendent arriving at a scene in a case of emergency, being able to shut a valve off at once without help, as compared with the ordinary way of hurrying to hunt up men and dispatch them to the job, is obvious.

## PORTABLE TESTING METER

Every waterworks department should have some means of testing water meters that have been repaired or meters in service whose accuracy has been questioned by consumers. It is also a wise precaution to test all old meters and occasionally all large meters in service. A very convenient, inexpensive and accurate way of doing this is to use a portable testing meter such as that of the Buffalo Meter Company, shown in the illustration. It may be used in the meter repair shop or carried from place to place and the service meters tested without removing them from the pipes. The test is made by connecting the testing meter in tandem with the service meter so that the same volume of water passes through both. Any error in the service meter is shown by the difference in registration of the two meters.

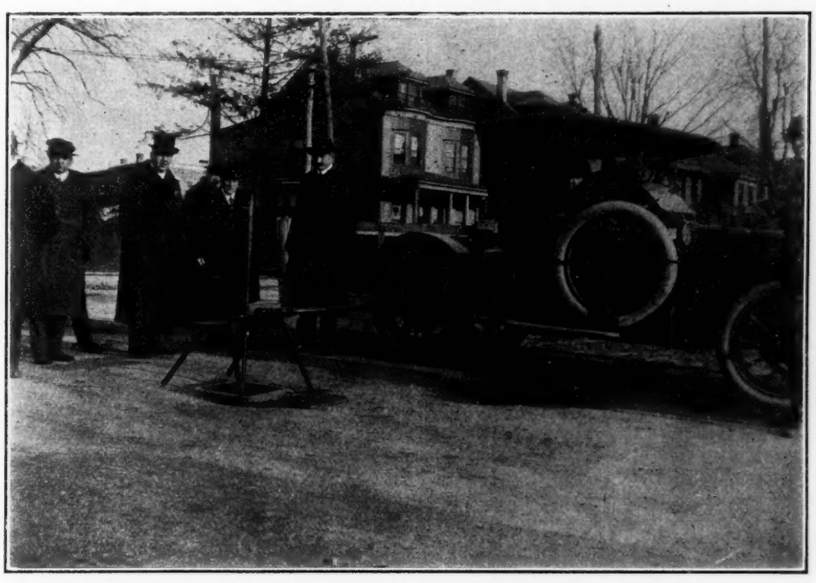


PORTABLE WATER METER FOR TESTING.

Referring to the illustration, the connections are for ⅝, ¾, 1, 1¼, 1½ and 2 inch meters. On the other side are the control valve and discharge connection. Washers with different orifices may be inserted in this section. The dial is a special one with graduated circle and set back hand, which greatly simplifies the observations.

## SMALL STEAM TURBINES.

The Terry Steam Turbine Co., Hartford, Conn., have cause for gratification in the fact that their type of turbine which combines a multi-velocity stage element for the high pressure end with a series of multi-pressure stage elements in the low pressure end has been found to be in accordance with the best practice of builders in Europe, the home of the turbine. During their recent trip abroad the members of the American Society of Mechanical Engineers noticed that the leading builders of turbines in Germany and Switzerland have universally adapted for condensing turbines a combination of multi-velocity stage element for the high pressure end with a series of multi-pressure stage elements (such as Rateau, Zoelley or Parsons) in the low pressure end. The Terry turbine has a new feature—the return flow. This overcomes a troublesome weakness of turbines—the leakage of air through the low pressure gland to the condenser.



OPENING GATE VALVE BY AUTO POWER.

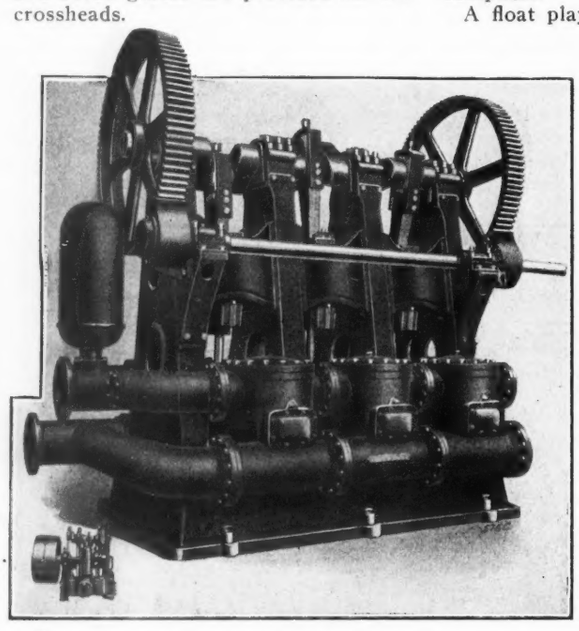
## SMITH-VAILE PUMPS.

### Triplex Pumps With Four Frames or Columns—Removable Water Cylinders.

The Platt Iron Works, Dayton, O., are manufacturers of a line of triplex power pumps, called the Smith-Vaile line, which covers a large variety of styles and sizes to meet all conditions of drive and service. The illustration shows a Class D, double-acting, having a capacity of from three to three thousand gallons per minute. These pumps may be driven from any avail-

able source of power or may be direct connected by coupling gears or chain to steam, gas, or gasoline engines electric motors, water wheel, etc.

The main power or bearing frame is of the four standard type, giving to each crank two bearings. The columns are thoroughly ribbed and braced by transverse sections, the housing is bored and planed to perfect alignment and bored guides are provided for the crossheads.



DOUBLE ACTING TRIPLEX PUMP.

The valve chambers are located on either side of the water cylinders, and are provided with liberal water passages and valve area.

Water pistons are of the double-acting, fibrous packed type. The piston head or body is secured to the rod by a nut. The piston follower is secured to body of piston by bolts. The packing may be removed by removing cylinder head and piston follower. Piston rods are of steel and highly polished. Special rods of bronze are sometimes used.

Removable water cylinders are furnished for these pumps. The cylinder is not merely a bushing forced into the main casting, but a casting separate from the water chamber and of such design as to facilitate its removal for reboring or renewal. The cylinder is provided with a flange with faced surfaces, and the water chambers are placed for its reception.

These pumps are furnished with single gear on the crankshaft, full pressure of 75 pounds or less, and with double gears and single driving pulley without bored bearing of pressure valves, 75 pounds per square inch.

## AUTOMATIC ELECTRIC CELLAR DRAINER.

Those who are troubled with wet cellars or basements will appreciate the value of the automatic electric cellar drainer illustrated herewith. This device, it is claimed, is the first practical drainer of moderate price suitable for private residences, apartments, elevator pits, etc.

As shown by the diagram it consists of a centrifugal pump direct connected to a vertical Westinghouse motor. The pump is installed in a three-foot well into which the seepage drains, the motor and control apparatus being at the floor level where it is accessible for inspection and is out of the way of dampness.

A float plays between two stops on a vertical rod that is connected with the motor control switch. When the water in the well rises sufficiently to cause the float to press against the upper stop the motor is started and continues in operation until the water level is lowered so that the float presses against the lower stop, when the current is cut off. The seepage is thus cut off without attention, an occasional inspection and lubrication being all that is required.

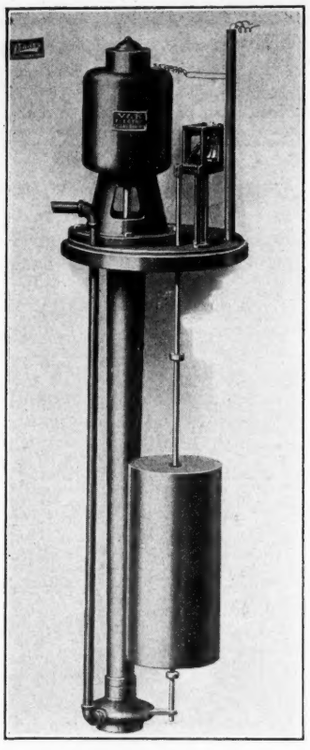
This pump has a capacity of 500 gallons per hour against a head of 5 feet, and 150 gallons per hour against a head of 20 feet. To install it all that is necessary is to provide a well 3 feet deep, place the pump, and make the electrical connections. It operates from the electric lighting circuit.

The Vaile-Kimes Co., Dayton, O., manufactures the outfit.

## CONTROLLING VALVES.

The Schade Valve Manufacturing Co., 2528 North American street, Philadelphia, Pa., are makers of controlling valves for water, steam and air. In the introduction of their catalogue the company states that it is their aim to produce the best devices that can be had at any price. For instance, in all their steam valves the cylinders and pistons are cast in pairs, in the same heat, and are stamped with the heat number. In the assembling of the valves only cylinders and pistons bearing the same heat number are placed in the same valve. This insures the same degree of expansion and prevents sticking and binding.

The illustration shows the construction of the Schade balanced float valve for use on open tanks and reservoirs to automatically control the supply of water by the change in the water level. The valve is of the single seat balanced type, making a positive seat, leakless valve, and one

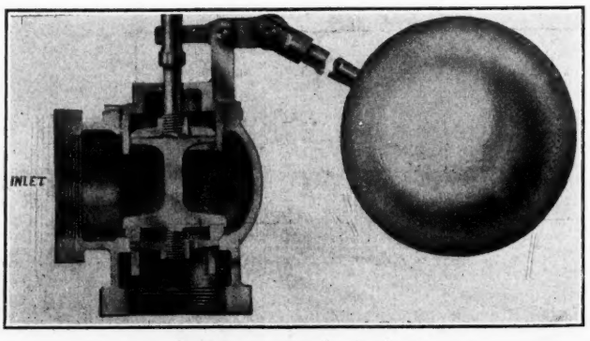


CELLAR DRAINER.

that will operate with a small float on high pressures without water hammering or chattering.

The action of the valve is controlled by a float, which is weighted to hold the valve open until the water rises to a point of contact with the float and closes the valve. The float rod has a corrugated wheel at the valve end, which permits the adjusting of the float at any angle. The water enters the side of the valve and is discharged from the bottom through a hush pipe, which should be screwed into the bottom of the valve and extend into the tank to a point about two feet below the highest water level. Special merits claimed for the valve are noiseless seating action, special water resisting piston leather and ease and accessibility of repairing. The valves are made up to 6-inch sizes.

Other leading valves made by this company are: Balanced control valves, pump controlling valves, pump regulating valves, vacuum controlling valves, steam pressure reducing valves, water pressure reducing valves.




BALANCED FLOAT VALVE.

# INDUSTRIAL NEWS

**Cast Iron Pipe.**—Chicago.—Quotations: 4-inch, $27; 6 to 12-inch, $25; 16-inch and up, $24. Birmingham. Manufacturers report better conditions. Considerable western business has been placed and several southern cities are in the market. Plants are operating at full time and stocks are not accumulating. Quotations: 4-inch, $22; 6-inch and up, $20. New York.—Private buying keeps up well. Quotations: 6-inch, car loads, $22 to $23.

**Lead.**—Quotations: New York, 4c; St. Louis, 3.875c.

**Okonite Cables.**—The Commercial Cable Company recently had occasion to take up some Okonite cables that had been in use under the water of New York harbor for fourteen years. Finding them in practically perfect condition, they were used in laying a new line under the harbor. A more detailed account of the incident is as follows: The cables were manufactured and installed in underground conduits by the Okonite company in 1900 and 1904 to connect with the trans-Atlantic and other deep sea cables of the Commercial Cable Company, the route being from their main office in New York City to a point on the seashore of the eastern end of Coney Island. The United States Government having decided to dredge a channel into Jamaica Bay, and the cables of the Commercial Cable Company crossing the line of their proposed operations, the Cable Company was notified by the Government to remove its cables, and it met the issue by transferring its landing place from Coney Island to Far Rockaway, well outside of the zone of dredging operations. This necessitated the laying of an underground connection from the main office in New York City to Far Rockaway, a distance of 22 miles, and the contract for the making of this connection was awarded to the Okonite Company and consisted of three 14-conductor lead-covered cables installed in underground conduits which, when the installation was complete, tested up to the usual Okonite standard and well in excess of the specifications, which were most exacting. The transfer of the ocean cables and the connection with the office having been accomplished, there was no further use for the cables over the Coney Island route, so it was decided to take them out of the conduits and relay them as extra conductors over the Far Rockaway line. This work is now in progress, and as the sections are relayed and connected up, tests show the electrical and physical condition of the conductors to be practically unimpaired after fourteen and ten years of uninterrupted service.

**Electrical Testing.**—The Electrical Testing Laboratories, 80th street and East End avenue, New York City, have issued in pamphlet form a paper read by Wilson S. Howell before a meeting of the Edison Illuminating Companies.

**Pumps.**—The Deane Steam Pump Co., 115 Broadway, New York, in their bulletin D224 describe their horizontal double-acting single-cylinder power pumps. The cylinder of these pumps is of the submerged piston type, allowing the pump to start without being primed. These pumps are designed particularly for isolated plants of moderate size and the bulletin gives general advice as to the installations.

**Bell Automatic Motor.**—The Bell Electric Motor Co., Garwood, N. J., manufacture motors built of steel and of high efficiency for industrial purposes, including pumping. Their D-shaped pole pieces are said to require less electricity to produce a given power. The commutator is made of hard-drawn pure copper, insulated with solid sheet mica, compressed by hydraulic power. The company is prepared to furnish complete pumping sets of any capacity.

**Engineering Firm.**—The firm of East St. Louis Engineering Company has lost two of its members in the death of W. J. Crocken and E. M. Crocken. The former had an extensive experience in railroad and municipal engineering, having been in the employ of several railroads for twelve years and having served successively as assistant and city engineer of the city. His brother, E. M. Crocken, was superintendent of the Park Board up to the time of his death. Mr. Jas. F. Parr, who has been connected with the firm since its inception, now becomes the senior member.

**Pipe Coating.**—Besco pipe coating is a bituminous material made by the Bituminous Products Company, 278 Woodward avenue, Detroit, Mich., for preserving and protecting iron and steel. As is well known, the life of steel and iron pipe is dependent largely upon the protective coating. The life of wood fibre is similarly dependent upon the life of the coating of the steel bands which hold the fibre together. Besco compounds are new but not experimental, as they are the result of years of experience and an intimate and practical knowledge of the bituminous industry.

**Electric Pumps.**—The Dayton Pump and Mfg. Co., Dayton, O., have published an attractive little folder illustrating a number of their electrically-driven pumps and describing the advantages of their use in public or private buildings where an independent water supply is desirable.

**Steel Bridges.**—The Chicago Bridge & Iron Company, Greenville, Pa., will make large additions to its plant and will erect new buildings, which will nearly double the present capacity. The company is a fabricator of structural steel and has a large number of orders ahead.

**Lighting Standards.**—The Central Foundry Co., 90 West street, New York, have taken over Elmer P. Morris' patents on ornamental lighting standards heretofore made by the Elmer P. Morris Iron Works and Mr. Morris will be the sales manager for the lighting standard department.

## NEWS OF THE SOCIETIES.

(Continued from page 289)

of Social Service; G. C. Batcheller; M. J. Horan, attorney Building Code Committee; Charles A. Valentine, architect; H. M. Rice, vice president American Audit Company; Sidney Ascher, all of New York City.

Organization was completed by the election of Charles W. Abrams as treasurer and Bernard Glaser as secretary. Lewis & Kelsey of 5 Nassau street were retained as general counsel and Edward Staats Luther was appointed director of publicity.

This society, by its charter, is duly empowered to carry out the following set purposes:

1. To plan, suggest, investigate, devise and effectuate methods to safeguard life and property through the construction of fireproof buildings and the use of the most practical types of fireproof materials and safety devices.

2. To urge the enactment and adoptionof laws, codes, regulations and rulings by Legislatures and other public bodies and officials in order to provide proper safeguards against fire in every State, city, county, town and other political subdivision in the United States and elsewhere.

3. To compile and furnish to engineers, architects, builders, property owners, committees, organizations and public officials detailed information concerning fireproof materials and methods of construction and equipment.

4. To appear by its officers and by duly authorized representatives before Legislatures, civic and other public and private bodies and individuals of every description and in any part of the world in advocacy of the objects of the society, and to show the saving of life and of money that can be effected through methods of fire prevention.

5. To investigate existing statutes, codes, regulations and rulings concerning fire prevention and safety, with a view to contending for their improvement, as well as enforcement.

6. To inspect buildings of all descriptions and to conduct tests of building materials and safety devices, and to report thereon.

7. To investigate and examine into the causes of conflagrations and catastrophies in detail and to publish its findings of such examinations and investigations together with recommendations resultant therefrom.

8. To cooperate with legislators, public officials and civic organizations, as well as with private bodies and individuals of every description, to effectuate the objects of the society.

9. To prosecute public officials and others for negligence in the enforcement of fire prevention and safety methods.

Arrangements have been completed for the issuance of a monthly magazine known as FIRE PREVENTION, as the official organ of the society.

# ADVANCE CONTRACT NEWS

**ADVANCED INFORMATION**
**BIDS ASKED FOR**

**CONTRACTS AWARDED**
**ITEMIZED PRICES**

**To be of value this matter must be printed in the number immediately following its receipt, which makes it impossible for us to verify it all. Our sources of information are believed to be reliable, but we cannot guarantee the correctness of all items. Parties in charge of proposed work are requested to send us information concerning it as early as possible: also correction of any errors discovered.**

## BIDS ASKED FOR

| STATE | CITY | REC'D UNTIL | NATURE OF WORK | ADDRESS INQUIRIES TO |
|---|---|---|---|---|
| | | | **STREETS AND ROADS** | |
| O., | Elyria | 1 p.m., Feb. 28. | Furnishing material, grading, draining and macadamizing various roads | Ed. Laird, Eng. |
| Ill., | Mattoon | 7.30 p.m., Feb. 28. | Constructing 350 lin. ft. concrete curb | C. L. James, Eng. |
| Ont., | Sudbury | Feb. 28. | 8,240 lin. ft. granolithic sidewalk | W. J. Ross, Town Clk. |
| Iowa, | Sioux City | Feb. 28. | 5 to 8 miles concrete paving | F. C. Smith, City Engr. |
| O., | Mt. Vernon | Feb. 28. | Grading, draining and paving with cement, about 9,300 sq. yds.; 6,300 lin. ft. 4-in. drain tile and 6,800 lin. ft. straight curb | Dir. Pub. Serv. |
| O., | Columbia | 1 p.m., Feb. 28. | Grading, draining and macadamizing ten miles road | H. R. Pickney, Clk. |
| Ill., | Rock Island | Feb. 28. | Cement sidewalks, estimated cost $7,200 | W. Streichler, City Engr. |
| O., | Ottawa | noon, Feb. 29. | Constructing various stone roads | J. E. Roose, Co. Aud. |
| Fla., | St. Augustine | Feb. 29. | Furnishing labor and various materials for paving | I. I. Moody, Ch. Bd. Co. Comrs. |
| Tex., | Mineral Wells | Mar. 1. | Macadam road; cost, $55,000 | G. S. Steward, Mayor. |
| N. Y., | Lockport | Mar. 1. | Improving road, 8.33 miles | Bd. Supervisors. |
| Mich., | Port Huron | Mar. 1. | Paving streets with various materials | Clerk of St. Clair Co. |
| Ill., | Arcola | Mar. 1. | Various street improvements | A. Schneider, Mayor. |
| Minn., | Mankato | Mar. 2. | Grading street | F. W. Bates, City Clk. |
| Ind., | Vernon | 11 a.m., Mar. 2. | Grading, draining and paving highway | C. J. Bernhard, Co. Aud. |
| Ind., | Newport | 10 a.m., Mar. 2. | Grading, graveling or macadamizing highway | R. Slater, Co. Aud. |
| Ont., | Cayuga | Mar. 2. | Constructing 26½ miles macadam road | T. A. Snider, Co. Clk. |
| D. C., | Washington | Mar. 2. | Furnishing and delivering tandem steam roller, 8 tons | O. P. Newman, Ch. Comrs. D. C. |
| N. J., | Plainfield | Mar. 2. | Furnishing crushed stone, crosswalks and curbing | City Clk. |
| N. D., | Williston | 9 a.m., Mar. 2. | Grade and stone fill and placing two 5-foot metal culverts | M. H. Aaen, Aud. Williams Co. |
| Neb., | Kearney | 3 p.m., Mar. 2. | Paving with brick, asphalt and concrete | T. N. Hartzell, City Clk. |
| Wash., | Olympia | 2 p.m., Mar. 2. | Constructing 23.4 miles highway | W. R. Roy, State Hwy. Bd. |
| Mont., | Helena | Mar. 2. | Furnishing two 600-gallon capacity street sprinklers | City Clerk. |
| Ind., | Greencastle | 2 p.m., Mar. 2. | Constructing gravel road | C. L. Airhart, Putnam Co. Aud. |
| Ind., | Goshen | 10 a.m., Mar. 2. | Constructing four roads | J. W. Brown, Elkhart Co. Aud. |
| Ind., | Greensburg | 1 p.m., Mar. 2. | Constructing road | L. W. Sands, Decatur Co. Aud. |
| Ind., | Jeffersonville | 10 a.m., Mar. 2. | Constructing road | G. W. Stoner, Clark Co. Aud. |
| Ia., | Marion | 7.30 p.m., Mar. 2. | 30,000 sq. yds. paving, various materials | P. O. Clark, City Clerk. |
| Ia., | Cedar Rapids | Mar. 2. | Paving with various materials | City Clerk. |
| Minn., | Aitken | Mar. 2. | Clearing and grubbing 4½ miles road | J. B. Lemire, Co. Aud. |
| Mo., | St. Louis | Mar. 3. | Street and alley improvements | E. R. Kinsey, Pres. Bd. P. W. |
| Ind., | Knox | Mar. 3. | Gravel road | C. W. Weninger, Starke Co. Aud. |
| Ind., | Martinsville | noon Mar. 3. | Macadam road | J. S. Whitaker, Morgan Co. Aud. |
| Ind., | Marion | 2 p.m., Mar. 3. | Two stone roads | E. H. Kimball, Grant Co. Aud. |
| Md., | Baltimore | Mar. 3. | Constructing 5 sections state highway, 24.95 miles | W. L. Marcy, Sec. State Rds. Comm. |
| Miss., | McComb City | Mar. 3. | 5,000 lin. ft. concrete sidewalks; 640 lin. ft. street crossing | J. D. Harrell, City Clk. |
| N. J., | Jersey City | Mar. 3. | Repaving with brick on concrete base | M. I. Fagen, City Clk. |
| Fla., | Miami | 10 a.m., Mar. 3. | Four street sprinklers | Z. T. Merritt, Clk., Co. Comrs. |
| N. Y., | Buffalo | 11 a.m., Mar. 3. | Repairing asphalt pavement | F. G. Ward, Comr. P. W. |
| Wis., | Superior | Mar. 3. | Paving with various materials | Board Public Works. |
| N. J., | Jersey City | Mar. 3. | Furnishing 50,000 gals. road oil and repairing macadam roadways | M. I. Fagen, City Clk. |
| O., | London | Mar. 3. | Highway construction, about 2 miles | County Commission. |
| Minn., | Walker | 2 p.m., Mar. 3. | Constructing state rural highway, 23.6 miles long | I. P. Byhre, Aud., Case Co. |
| La., | Lake Charles | Mar. 3. | Improving highways, approximately 14 miles | E. C. Hauser, Clk. |
| Ind., | Decatur | 10 a.m., Mar. 3. | Grading, draining and paving various roads (12 jobs) | T. H. Baltzell, Co. Aud. |
| Ind., | Brownstown | 2 p.m., Mar. 3. | Grading, draining and paving highway | A. Luedtke, Co. Aud. |
| Ind., | Madison | 1.30 p.m., Mar. 3. | Grading, draining and paving highway | A. M. Taff, Co. Aud. |
| Ind., | Monroe | 10 a.m., Mar. 3. | Highway construction with macadam | T. H. Baltzell, Co. Aud. |
| Ind., | Kokomo | 10 a.m., Mar. 3. | Constructing gravel and brick road | E. B. Swift, Co. Aud. |
| Ind., | Paoli | 2 p.m., Mar. 3. | Highway construction | E A. Palmer, Co. Aud. |
| Ind., | English | 2 p.m., Mar. 3. | Grading, draining and paving highway | J B. Emlow, Co. Aud. |
| O., | Delta | noon, Mar. 3. | Paving work | A. B. Thomson, Vil. Clk. |
| O., | Columbus | Mar. 3. | Road construction | Comrs. of Madison & Franklin Counties. |
| Ind., | Shelbyville | 10 a.m., Mar. 4. | Grading, draining and paving highway | F. W. Fagel, Co. Aud. |
| Ind., | Muncie | 10 a.m., Mar. 4. | Grading, draining and macadamizing highway | F. M. Williams, Co. Aud. |
| Ind., | Sugar Creek | Mar. 4. | Improving highway | F. W. Fagel, Co. Aud. |
| S. D., | Plankington | Mar. 4. | Constructing 15 miles highway | M. H. Griffin, Ch. Co. Comn. |
| Ind., | Washington | 10 a.m., Mar. 4. | Grading, graveling or macadamizing highway | Bd. Comrs., Delaware Co. |
| Mont., | Plentywood | 2 p.m., Mar. 4. | Furnishing 12 road slips, 5 road piles, 1 grader, 1 road drag, 4 4-wheeled scrapers, etc | B. H. Johnson, Clk. & Rec. |
| N. Y., | Brooklyn | Mar. 4. | Regulating and repaving with granite pavement | L. H. Pounds, Boro. Pres. |
| Wash., | Davenport | Mar. 4. | Six miles waterbound macadam | J. T. Thayer, Co. Engr. |
| Mo., | Independence | Mar. 4. | Grading and draining road, 1¼ miles | R. T. Proctor, Co. Sup. |
| Minn., | Duluth | Mar. 5. | Clearing, grubbing, etc., road (18 jobs) | O. Halven, St. Louis, Co. Aud. |
| Ind., | Corydon | 2 p.m., Mar. 6. | Constructing road | J. L. O'Bannon, Harrison Co. Aud. |
| Ind., | Ft. Wayne | 10 a.m., Mar. 6. | Stone or gravel road | C. H. Brown, Allen Co. Aud. |
| Ind., | Monmouth | 10 a.m., Mar. 6. | Grading, draining and paving with crushed stone | C H. Brown, Co. Aud. |
| O., | Cincinnati | noon, Mar. 6. | Road improvement (two jobs) | A. Reinhardt, Clk. |
| O., | Upper Sandusky | noon, Mar. 6. | Grading and stoning waterbound macadam road | J. Marguerat, Aud. |
| N. Y., | Albany | 1 p.m., Mar. 6. | Highway construction in various counties | J. W. Carlisle, Comr. |
| Wis., | Racine | 10 a.m., Mar. 7. | Paving with brick | P. H. Connelly, City Eng. |
| Pa., | Scranton | Mar. 9. | Constructing improved macadam road | C. P. Savage, Co. Controller. |
| Wash., | Olympia | Mar. 9. | Constructing 50 miles highway | State Hwy. Comm. |
| La., | De Quincy | Mar. 10. | 60,525 sq. ft. concrete sidewalk; 14,480 ft. curb | T. H. Mandell, Engr. Lake Charles. |

## BIDS ASKED FOR

| STATE | CITY | REC'D UNTIL | NATURE OF WORK | ADDRESS INQUIRIES TO |
|---|---|---|---|---|
| Wis., | Lake Geneva | Mar. 10 | 22,000 sq. yds. creosoted wood block pavement | A. G. Bullock ,City Clk. |
| O., | Youngstown | Mar. 11 | Constructing sidewalks, curbs and gutters | J. Richard, Clerk. |
| Ia., | Nevada | Mar. 11 | 23 blocks paving, concrete or brick | City Clerk. |
| Ind., | Kokomo | 10 a.m., Mar. 12 | Constructing stone road | E. B. Swift, Howard Co. Aud. |
| O., | Cincinnati | 2 p.m., Mar. 13 | Street improvement | A. Reinhardt, Clerk. |
| O., | Toledo | 10 a.m., Mar. 13 | Grading, draining and macadamizing | Bd. of Lucas Co. Commrs. |
| Fla., | Lake City | Mar. 16 | 2,600 sq. yds. reinforced concrete pavement | C. R. Horne, City Engr. |
| O., | Cleveland Heights | noon. Mar. 16 | Grading, paving and reconstructing sidewalks | H. H. Canfield, Vil. Clk. |
| Mont., | Billings | Mar. 17 | 18,500 yds. of paving | L. E. Torrence, City Clk. |
| Ia., | Monticello | 8 p.m., Mar. 19 | 12,400 sq. yds. paving; 10,350 ft. combined curb and gutter | C. J. Northrop, City Clk. |
| Fla., | Jacksonville | Mar. 23 | Paving two streets | Board of Bond Trustees. |
| Kan., | McPherson | Mar. 23 | Asphaltic concrete pavement and curb, cost $75,000 | H. A. Roland, City Engr. |
| Minn., | Fergus Falls | 2 p.m., Mar. 24 | Certain road tools and machinery | W. Lincoln, Aud. of Otter Tail Co. |
| Ia., | Atlantic | Mar. 30 | Concrete paving, 50,000 sq. yds | E. Nicholas, City Clk. |
| Wash., | Mt. Vernon | Apr. 1 | Constructing 3 miles of highway; cost, about $35,000 | Co. Comrs. |
| Tenn., | Nashville | Apr. 1 | Paving with various materials | W. W. Southgate, City Engr. |
| Man., | Emerson | Apr. 1 | Constructing concrete sidewalk; cost, $7,000 | W. W. Unsworth, Clk. |
| N. J., | Elizabeth | Apr. 1 | 50,000 sq. yds. bituminous concrete pavement | City Clerk. |
| S. D., | Leola | 3 p.m., Apr. 7 | For Galvanized corrugated steel culverts | J. B. Whittmayer. |
| N. J., | Newton | May 1 | Improving 10 miles highway; cost, $100,000 | H. Snock, Co. Engr. |

### SEWERAGE

| | | | | |
|---|---|---|---|---|
| Ind., | Huntington | 10 a.m., Feb. 28 | Constructing 1 mile ditch | S. V. Hite, Co. Surveyor. |
| O., | Mt. Vernon | Feb. 28 | Constructing storm sewer | C. N. Williams, Clerk. |
| Mont., | Butte | 6 p.m., Mar. 1 | Sanitary sewer | W. A. Willis, City Clk. |
| Ark., | Blytheville | Mar. 1 | Constructing sanitary sewer; cost, $60,000 | H. C. Houston, Engr., Memphis, Tenn. |
| Ia., | Osage | Mar. 1 | Sewer system, 12 miles, $75,000 | E. E. Harper, Cons. Engr., 911 Grand Ave., Kansas City, Mo. |
| Mich., | Niles | Mar. 1 | Four sewers; 5,000 ft. 8 to 24-inch crock tile | M. J. Cleary, Engr., St. Joseph |
| Cal., | Los Angeles | Mar. 2 | Constructing storm sewer, estimated cost $613,400 | Bd. Pub. Wks. |
| N. D., | New Rockford | 8 p.m., Mar. 2 | Constructing septic tank sewage disposal plant | J. K. Burch, Pres. B. P. W. |
| Ia., | Ginnell | 7.30 p.m., Mar. 2 | Furnishing sewer pipe, brick, cement, etc., for one year | City Clerk. |
| N. J., | Asbury Park | 8 p.m., Mar. 2 | Constructing about 800 feet of 8-inch sewer | S. H. Calvert, City Clk. |
| Ia., | Ottumwa | 10 a.m., Mar. 2 | Trunk sewers | H. J. Bremhorst, Commr. Sts. & Pub. Imp. |
| Ind., | Kokomo | 10 a.m., Mar. 2 | Constructing sewer. | P. Havens, City Clk. |
| Mo., | St. Louis | Mar. 3 | Constructing sewers | W. T. Findlay, Sec. |
| O., | Columbus | Mar. 3 | Installing pumping machinery in sewage station | Director Public Service. |
| N. J., | Jersey City | 4 p.m., Mar. 3 | Constructing 42-inch brick circular relief sewer | M. I. Fagan, City Clk. |
| N. D., | Grand Forks | Mar. 3 | Constructing pipe sewers; cost, $5,300 | L. H Lykken, City Engr |
| Ind., | Fort Wayne | Mar. 7 | Constructing one mile ditch | C. H. Brown, Allen Co. Aud. |
| Ia., | Garner | 1 p.m., Mar. 9 | Constructing drain | W. L. Fitkin, Co. Aud. |
| N. J., | Newark | 2 p.m., Mar. 10 | Constructing foundations and connections for pumping station | J. S. Gibson, Clk. Passaic Valley Sew. Comn. |
| Neb., | Wayne | 8 p.m., Mar. 12 | Sanitary sewer | J. M. Sherry, City Clk. |
| Ia., | Sioux City | Mar. 14 | About 5 miles 9-inch vit. pipe sewer | P. J. Wells, City Clk. |
| Va., | Lynchburg | Mar. 15 | Furnishing sewer pipe | H. L. Shaner, City Eng. |
| O., | Cleveland Heights | Mar. 16 | Sewer construction | H. H. Canfield, Vil. Clk. |
| Ill., | Rankin | Apr. 15 | Constructing storm and sanitary sewer system | J. W. Shepard, Vil. Clk. |

### WATER SUPPLY

| | | | | |
|---|---|---|---|---|
| Mich., | Grand Rapids | 8 p.m., Feb. 28 | Cast iron water pipe | L. D. Cutcheon, Sec. Bd. P. W. |
| O., | Mt. Vernon | Feb. 28 | For pumping engine | R. B. Howel, Sec. Met. Water Dist |
| Sask., | Kerr-Robert | Feb. 28 | Constructing water works system | City Secretary. |
| Quebec, | Lake Megantic | Mar. 1 | Constructing dam | Town Council. |
| Pa., | Dayton | Mar. 1 | Constructing water works, $20,000 | R. R. Wilson, Engr., Saltsburg. |
| Pa., | Hamburg | Mar. 1 | Constructing water system | Dr. S. C. Dixon, Comr., Harrisburg. |
| Ia., | Chelsea | noon, Mar. 2 | Improving waterworks system, including 15½ tons c.-i. pipe, and 7,149 lbs. special castings, etc | J. Benesh, Twn. Clk. |
| Que., | Montreal | Mar. 3 | Constructing pumping station, gate house, etc | L. N. Senecal, Sec. Bd. Comrs. |
| Miss., | McComb | Mar. 3 | Laying 2,000 ft. 4-inch main | J. D. Harrell, City Clk. |
| Miss., | Batesville | Mar. 3 | Constructing water works | Mayor. |
| Tenn., | Nashville | 10 a.m., Mar. 3 | Laying 1,540 ft. water mains | H. E. Howse, Mayor. |
| Neb., | Gering | 6 p.m., Mar. 3 | 1 pump house, water tank and tower, etc.; total cost, $13,000. | T. S. Rubotoon, Clerk. |
| Ill. | Chicago | 3 p.m., Mar. 5 | Furnishing about 2,000 ft. riveted pipe with fittings | U. S. Reclamation Serv., Federal Bldg. |
| Ill., | Cuba | 7.30 p.m., Mar. 6 | 60,000 gal. steel tank and brick pump house | V. L. Durand, City Clk. |
| N. Y., | Rochester | Mar. 11 | Furnishing 8 miles 37-inch c. i. pipe | Clerk Piper. |
| Cal., | Colton | Mar. 15 | Constructing 1,500,000 gal. reservoir; cost, $6,000 | N. Davenport, City Clk. |
| Ill., | Wilmington | Mar. 17 | Laying about 11,000 ft. water mains, setting hydrants, &c. | L. Monsen, City Clerk. |
| O., | Junction City | Apr. 1 | Constructing water works, about $16,000 | H. L. Maddocks, Engr., Newark. |

### LIGHTING AND POWER

| | | | | |
|---|---|---|---|---|
| Ky., | Erlanger | 7.30 p.m., Feb. 28 | Electric lines through town | A. Victor, Jr., Twn. Clk. |
| N. Y., | Oneonta | Mar. 1 | Furnishing street lights | S. M. Close, City Clk. |
| Pa., | Scottdale | 8 p.m., Mar. 2 | Furnishing 1,000 ft. fire hose | F. M. Newcomer, Sec. Boro. |
| D. C., | Washington | Mar. 2 | Electrical attachments and fixtures, wire, valves, etc | Gen. Pur. Agt., Isthmian Canal Comn. |
| Tex., | Dallas | Mar. 4 | Installing power plant; cost, $25,000 | County Comrs. Court. |
| N. J., | Roselle | 8 p.m., Mar. 6 | Lighting borough with 213 32-c.p. lamps | J. F. Ostrander, Boro. Clk. |
| Minn., | St. Paul | 2 p.m., Mar. 10 | Heating, ventilating and electrical construction of public library | Board of Library Dir. |
| Cal., | Napa | Mar. 10 | 250-H.P. water tube boiler and oil burning furnace | W. F. McClure, State Engr., Sacramento. |
| Tex., | Dallas County | Mar. 11 | Installing high and low pressure power plant, with full equipment | County Commissioners. |
| R. I., | Newport | 11 a.m., Mar. 14 | Underground electric distributing system | H. R. Stanford, Ch. Bureau Yds. & Docks, U. S. Navy, Wash., D. C. |

### FIRE EQUIPMENT

| | | | | |
|---|---|---|---|---|
| Mass., | Middleboro | Feb. 28 | Furnishing one motor hose wagon; cost, $2,500 | W. A. Green, Clk. Bd. Engrs. |
| Minn., | Mankato | Mar. 2 | Furnishing 1,000 ft. 2½-in. cotton rubber-lined hose | City Council. |
| Wis., | Oconomowoc | Mar. 3 | 500 ft. 2½-inch hose | C. H. Schoenike, City Clk. |
| Minn., | St. James | 8 p.m., Mar. 9 | Furnishing 500 ft. fire hose | C. Larsen, City Recorder. |
| Ariz., | Phoenix | Mar. 17 | Furnishing new apparatus | City Clerk. |

## BIDS ASKED FOR

| STATE | CITY | REC'D UNTIL | NATURE OF WORK | ADDRESS INQUIRIES TO |
|---|---|---|---|---|
| | | | **BRIDGES** | |
| Conn., | Saybrooke | Feb. 28 | Reinforced concrete bridge | Selectmen. |
| Minn., | Luverne | 1 p.m., Feb. 28 | Constructing concrete slab span bridge | J. O. Jacobsen, Chr. Twn. Bd. |
| N. Y., | Brooklyn | Mar. 1 | Constructing two concrete bridges | L. D. Morris, Engr., 1965 Broadway, N. Y. City. |
| Tex., | Columbia | Mar. 2 | Repairing bridge | J. M. Munson, Co. Judge, Angleton. |
| Kan., | Smith Centre | Mar. 2 | Bridge construction and repair work | J. E. Merriam, Smith Co. Clk. |
| Ind., | Greenfield | 10 a.m., Mar. 2 | Bridge construction | Comrs. Hancock Co. |
| Fla., | Titusville | 4 p.m., Mar. 2 | Reconstructing bridge; cost, $7,000 | J. F. Mitchell, Clk. B. Co. Com. |
| Ia., | Audobon | Mar. 2 | Concrete bridges | C. D. Forsteck, Co. Engr. |
| Ind., | Bloomington | 2 p.m., Mar. 3 | Constructing bridge | W. S. Kinser, Monroe Co. Aud. |
| Ind., | Shelbyville | 10 a.m., Mar. 3 | Constructing bridge | F. W. Fagel, Co. Aud. |
| Minn., | Little Falls | 2 p.m., Mar. 3 | Constructing state bridge | B. Y. McNairy, Co. Aud. |
| N. Y., | Eastchester | Mar. 4 | Constructing bridge | H. P. Green, Clk., White Plains |
| S. D., | Clear Creek | 2 p.m., Mar. 4 | Constructing steel and concrete bridge | A. L. Larson, Co. Aud. |
| Iowa, | Estherville | noon, Mar. 5 | Constructing 3 reinforced concrete bridges | W. H. Gibbs, Chm. Bd. Supv. |
| Cal., | San Diego | 2 p.m., Mar. 5 | Constructing two reinforced concrete bridges | J. T. Butler, Clk. |
| Ind., | Greenfield | 10 a.m., Mar. 7 | Constructing bridge | L. Wood, Hancock Co. Aud. |
| O., | Cambridge | 11 a.m., Mar. 7 | Constructing 100-ft. stand bridge | T. C. White, Guernsey Co. Aud. |
| O., | Coshocton | Mar. 10 | Reconstructing bridges; cost, $65,000 | County Commissioners. |
| Minn., | New Ulm | 2 p.m., Mar. 10 | Constructing concrete and steel bridges | County Auditor. |
| Ia., | Knoxville | 1 p.m., Mar. 10 | 106 bridges and culverts | J. B. LeMere, Co. Aud. |
| O., | Dayton | 10 a.m., Mar. 11 | Constructing bridge; steel super-structure and concrete sub-structure | W. H. Aszling, Sec. Co. Comrs. |
| Ind., | Brookville | 11 a.m., Mar. 17 | Constructing several bridges | Bd. Comrs., Franklin Co. |
| Minn., | Winona | 2 p.m., Mar. 26 | Constructing 10 concrete culverts; cost, $32,865 | C. A. Anding, Co. Aud. |
| S. D., | Salem | 2 p.m., Apr. 7 | Furnishing galv. corrugated metal culverts for the year. | A. E. Ecklein, Co. Aud. |
| Ore., | Gold Beach | 5 p.m., Apr. 9 | Reinforced concrete bridge to cost $35,000 | J. M. Caughell, Co. Sur. |
| | | | **MISCELLANEOUS** | |
| Mich., | Big Rapids | 3 p.m., Feb. 28 | Constructing post-office | O. Wenderoth, Super. Arch., Washington, D. C. |
| Ill., | Chicago | 11 a.m., Feb. 28 | One car portable railway paving plant | L. E. McGann, Comr. P. Wks. |
| Ill., | Chicago | 11 a.m., Feb. 28 | Furnishing and delivering Portland cement | L. E. McGann, Comr. P W. |
| Tex., | Kingsville | noon, Mar. 1 | Erecting fireproof court house and hospital | Comrs. Court of Kleburg Co. |
| N. C., | Raleigh | Mar. 2 | Erecting court house; cost, $224,000 | City Clerk. |
| Mont., | Helena | 8 p.m., Mar. 2 | Two 600-gallon tank street sprinklers | E. J. McConnell, City Clk. |
| Pa., | Philadelphia | noon, Mar. 2 | Constructing pier and bulkhead | G. W. Norris, Dir. |
| N. Y., | New York | Mar. 2 | Constructing section 4 of new subway | Public Serv. Comn. |
| Mich., | Highland | 8 p.m., Mar. 2 | Incinerator plant | H. M. Ford, Clerk. |
| Ia., | Burlington | Mar. 2 | Collection and disposal of garbage, period of three years. | R. Kropach, City Clk. |
| O., | East Cleveland | noon Mar. 3 | Collecting garbage, etc., for two years | A. H. Graham, Dir. P. S. |
| Ont., | Welland | Mar. 3 | Furnishing crushed stone for road building | R. Cooper, Co. Clerk. |
| Ill., | Chicago | 11 a.m., Mar. 4 | Furnishing six tank wagons | L. E. McGann, Comr. P. Serv. |
| Ia., | Sidney | noon Mar. 5 | Reinforcement steel and Portland cement for 1914 | I. B. Jenkins, Fremont Co. Aud. |
| N. D., | Williston | 3 p.m., Mar. 9 | Constructing post-office | O. Wenderoth, Super. Arch., Washington, D. C. |
| Ariz., | Kingman | Mar. 9 | Erecting $70,000 court house | Co. Bd. Supervisors. |
| Minn., | Staples | 8 p.m., Mar. 10 | Constructing a jail | F. W. Findsen, City Clk. |
| Kan., | Osage | Mar. 11 | Constructing post office | O. Wenderoff, Sup. Architect. |
| Mo., | De Soto | Mar. 13 | Constructing post office | O. Wenderoth, Superv. Arch., Wash., D. C. |
| Ga., | Bainbridge | Mar. 14 | Constructing post office | O. Wenderoth, Superv. Arch., Wash., D. C. |
| N. J., | Camden | 8 p.m., Mar. 17 | Constructing timber bulkhead | F. S. Van Hart, Ch. Com. Wharves and Docks. |
| Panama, | Canal Zone | 11 a.m., Mar. 28 | Furnishing four steel towers | H. R. Stanford, Chf. Bureau Yds. & Docks, Wash., D. C. |
| Mo., | Richmond | May 1 | Constructing court house; cost, $100,000 | J. J. Pardue, Co. Treas. |

## STREETS AND ROADS

**Dadeville, Ala.**—At last session of Commissioners of Tallapoosa County it was decided to build improved highway from southern portion of county, beginning at East Tallassee, into Dadeville, county seat. Distance is 28 miles. Completion of this highway would give Tallapoosa County state aid roadway from southern boundary of county into northern portion to Horse Shoe Bend, distance of more than 40 miles.

**Florence, Ariz.**—Acting upon numerously signed petition Board of Supervisors of Pinal County has decided to at once build good road from Florence to Casa Grande, by way of ruins.

**Globe, Ariz.**—Engineer Julius Milton is making survey of Globe-Winkelman road to estimate cost.

**Fruitvale, Cal.**—Proposition of paving East 14th St. is being considered.

**Napa, Cal.**—To secure construction of state highway from Napa to Sausalito and Black Point, Supervisors have decided to call election to vote on issuing bonds of $135,000. Of this amount, $65,000 is to be donated to State Highway Commission as cash bonus. Remaining $75,0000 is for construction of stone bridges. Supervisors have also agreed to buy $125,000 of state highway bonds.

**Oakland, Cal.**—Resolutions have been adopted for improvement of various streets.

**Pasadena, Cal.**—Resolution of intention for grading, curbing, guttering, oiling and sidewalking of Tremont St., from Raymond to Summit, has been read for first time.

**Sacramento, Cal.**—By resolution City Commission has voted $9,000 to make possible sale of $225,000 worth of State highway bonds, money to be used in construction of Yolo Basin highway between Sacramento and Davis. Cost, $627,000.

**Sacramento, Cal.**—Immediate construction of state highway between Sacramento and Davis across Yolo Basin has been assured when $450,000 of state highway bonds were bought by W. W. Bassett, President of the Sacramento Clearing House, for $452,000. The Highway Commission immediately will call for bids on the road. Work will take approximately $627,000, remainder to be furnished by purchase of bonds by Solano and Yolo Counties. Concrete trestle across Yolo Basin, 16,000 ft. long, longest in this country, will be constructed to bridge basin. Route of road lies over M St. bridge and across Yolo By-pass, paralleling Southern Pacific track to Davis.

**San Diego, Cal.**—Plans to extend Tide St. to La Jolla St. by building viaduct across lowlands between two streets are being discussed.

**San Francisco, Cal.**—Paving of Sloat Boulevard, from ocean to its intersection with Corbett road, and of Junipero Serra Boulevard, from Sloat to county line, has been provided for by Board of Supervisors. Funds for improvement of Junipero Serra Boulevard are now available, and city engineer's office is preparing specifications for work.

**San Francisco, Cal.**—Public bids will shortly be received by Board of Public Works for paving of Vienna St., between Russia and Vienna Aves.; Corbett Ave., between Hattie and Corbin Sts., and also between Corbin and Danver Sts., and for sewering Gerard St., from Mansell to Olmstead St. About same time public bids will be received for paving of Edinburgh St., from Brazil to Persia Ave., crossing of 20th and Iowa Sts., Sears St., from Sickles Ave. southerly, Gladys St., from Santa Marina Ave. to Appleton Ave., Revere Ave., between Lane and Keith Sts., Mohawk Ave., between Mission and Huron Sts., Russia Ave., between Mission and Dublin Sts., and St. Mary's Ave., between Mission and Marsilly Sts. Proceedings are under way to complete improvement of San Bruno Ave., between Dwight St. and St. Paul Ave.

**Santa Ana, Cal.**—Members of Board of Supervisors have declared themselves favorable to purchase by county of $200,000 state highway bonds so that state highway may be completed through Orange County before 1915.

**Willows, Cal.**—County Clerk W. H. Sale has received notice from State Treasury at Sacramento that Glenn County state highway bonds have been sold.

**Hartford, Conn.**—Plan for widening Church St. has been approved.

**Manchester, Conn.**—State highway department has appropriated $15,416.12 for improvement of Main St. Town's share will be $3,854.

**Port Tampa City, Fla.**—Election will be held for voting on bond issue of $17,000 for paving, installation of water softening plant; also some storm sewer work.

**St. Augustine, Fla.**—Paving of Ribera St. with asphalt macadam is being petitioned for.

**Tampa, Fla.**—Board of Public Works is advertising for bids on some 29,610 sq. yds. of paving—brick—approximately 2 miles, contract on which will probably be let at next meeting of board. Greater bulk of this new paving will be done in First Ward.

**Waycross, Ga.**—Paving of Gilmore St. with brick is under consideration.

**Fayette, Ind.**—Resolution has been adopted for improvement of Kossuth St. from Fourth to Ninth.

**Indianapolis, Ind.**—Paving of Howard St. from Kentucky Av. to Belmont Av. has been petitioned for.

**Kokomo, Ind.**—Four issues of county road bonds amounting to $36,900 have been sold to J. F. Wild & Co., of Indianapolis.

**Muncie, Ind.**—City Engineer B. F. Deardorff will prepare specifications for following improvements: Paving of alley from Walnut to Jefferson St., between Main and Jackson Sts.; construction of paved alley from Main to Jackson St., between Walnut and Mulberry Sts.; construction of paved roadway in Victor St., from Walnut to High St.; paving of Seymour St., from Walnut to Mulberry St., and improvement of High St., between the main line of the L. E. & W. Railroad and switch of same railway lying about 100 ft. north.

**Portland, Ind.**—Property owners living southeast of the city have started petition for stone road, which if it is constructed will be best road in entire county. Petition calls for improvement of Seventh St., beginning at Meridian St. in South Portland and running east to Boundary Pike and thence running southeast to Salamonia Christian church which would be in neighborhood of three miles. Petition calls for road 24 ft. in width with layer of 12 ins. of crushed stone and 5-in. stone curb for entire distance.

**Leavenworth, Kan.**—Resolution has been passed providing for establishing of grade on South Esplanade, preparatory to paving of street.

**Crowley, La.**—Police Jury has sold $170,000 bond issue to Chicago capitalists. Money will be used in building good roads.

**Lake Charles, La.**—At regular meeting of City Commission City Commissioner of Streets and Parks was authorized to advertise for bids for paving Broad St. from Bilbo to Boulevard with asphaltic concrete. Paving will be 30 ft. in width instead of 44.

**New Orleans, La.**—Engineer Young has recommended that roadway of creosoted wood block be constructed at Pauline St. wharf, distance of about 3,000 ft., to cost about $33,000, and also wood block paving to roadway at Robin St. shed, 680 ft., to cost $7,337.

**Baltimore, Md.**—Bids have been received by Paving Commission for repaving of North Howard St. with sheet asphalt, as follows: Baltimore Asphalt Block & Tile Co., at $1.98 per sq. yd., and Warner-Quinlan Co., at $2.04 per sq. yd.

**Cumberland, Md.**—Bids will be asked for resurfacing of one section along National Pike from Green Ridge to Washington County line in Alleghany County, distance of 7.88 miles, by State Roads Commission. Bids for work will be received by Commission at its offices, 601 Garrett Building, Baltimore.

**North Andover, Mass.**—Town will vote on macadamizing of various streets.

**Kalamazoo, Mich.**—System of good roads has been laid out comprising nearly 350 miles.

**Saginaw, Mich.**—Unanimous approval has been given by board of supervisors to plan for construction of boulevard between Saginaw and Bay City on river front.

**St. Paul, Minn.**—Board of Public Works has adopted favorable report on order to pave Grotto St. from Fairmount Ave. to Linwood Pl., as well as several small grading orders.

**St. Joseph, Mo.**—Ordinances have been approved for various street improvements. J. E. Gates is City Clerk.

**Atlantic City, N. J.**—Preliminary steps for pavement of Meadow Blvd. have been taken at meeting of the Board of Freeholders. Freeholder Shackelford has stated that pavement could be laid for sum ranging from $35,000 to $38,000 per mile, and it is believed majority of Board will eventually favor project.

**Irvington, N. J.**—Ordinance has been passed to provide for opening of 18th Av., from South Grove St. easterly to boundary line of city of Newark in Town of Irvington.

**Paterson, N. J.**—City Engineer H. J. Harder has completed his arrangements for survey and plan of grade along line of Erie, and while he has not made all estimates as to possible cost this will incur, he has stated that approximate estimate of $3,000,000 would be about right.

**Perth Amboy, N. J.**—City Engineer Baumgartner has been instructed to have specifications for Oak Bluff Ave. improvement ready for inspection, and after their approval bids would be asked.

**Albany, N. Y.**—In planning for street improvements next summer, City Engineer Lanagan is preparing standard form of specifications which may be used on many streets and thus save time generally devoted to preparation of specifications for individual streets. Mr. Lanagan is preparing list of streets to be repaved next summer and sections of new streets to be improved.

**Buffalo, N. Y.**—See Miscellaneous.

**Franklin, N. Y.**—Town has appropriated $15,000 with which to rebuild Loon Lake Station-Hunter's Home Road and complete Sweeney Hill highway.

**Lockport, N. Y.**—Bills to improve main road from Medina to Lockport via Middleport, river road from Niagara Falls to North Tonawanda, and the Delaware Ave. road from Tonawanda to Buffalo will be introduced in the legislature.

**Mt. Morris, N. Y.**—Bill will probably be introduced in Assembly in near future asking that $100,000, or so much thereof as may be necessary, be appropriated for purpose of constructing highway and foot bridge over Genesee River at Portage.

**Asheville, N. C.**—Sum of $47,000 will be spent jointly by county of Buncombe and city of Asheville during approaching spring for paving road which extends from end of city's present South Main St. paving to entrance to famous Biltmore estate.

**Morgantown, N. C.**—Township has voted $50,000 in bonds for road construction.

**Newport, N. C.**—County Commissioners have ordered $5,000 bond issue for roads.

**Akron, O.**—A delegation of prominent citizens and taxpayers from Northfield and Northampton Townships will visit Summit County Commissioners to petition for improvement of state road.

**Bowling Green, O.**—Wood County Commissioners have sold $50,000 worth of five per cent. stone road improvement bonds to Stacy & Braun, Toledo.

**Cincinnati, O.**—Ordinances have been passed for various street improvements.

**Salem, O.**—Good roads enthusiasts are making definite arrangements to improve state highway leading from East Palestine through this city to Alliance. Brick is favored as paving material at estimated cost of $20,000 a mile. Stretch of road under consideration is 27 miles in length.

**Sandusky, O.**—Ordinances have been adopted for improvement of various streets.

**Toledo, O.**—Plans are being considered for rebuilding of public highway between Toledo and Perrysburg.

**Weleetka, Okla.**—Weleetka Township, embracing area of six by twelve miles, will expend $25,000 in building good roads during current year. Roads are to be built under direction of State Highway Engineer, and in accordance with plans and specifications of State Highway Commission's office.

**Carlisle, Pa.**—Ordinance committee has been instructed to prepare ordinance providing for paving this year of East High St., from Market Ave. to Bedford St.

**Erie, Pa.**—Paving of several west side streets are being considered.

**Erie, Pa.**—City Engineer Briggs has recommended paving of several streets.

**Oakhurst, Pa.**—Borough is considering paving of Beatrice, Corinne and Derby Aves.

**St. Mary's, Pa.**—Plans have been completed for paving connecting links between state roads now lying on each side of borough lines, one on state road and other on Washington St. This will mean paving of half mile of state road, part of South St. Mary's St. and Washington St. entirely. Plans as outlined are that state pay one-half and county and borough other half, divided equally.

**Swatora, Pa.**—Township is planning to improve its roads.

**Williamsport, Pa.**—Residents of lower end of Washington St. are preparing petition for paving of that residential highway, which will be presented to Council in short time.

**Providence, R. I.**—Report, together with estimates of cost of widening North Main St. from Benefit St. to present wide highway at North Burial Ground, will be sent to City Council committee on highways early next month by City Engineer Clapp.

**Sioux Falls, S. D.**—Paving of Minnesota Av. between 4th to 26th Sts. is being considered.

**Asheville, Tenn.**—Asheville and Buncombe County, acting in conjunction, have authorized construction of $47,000 boulevard between Asheville and Biltmore village. County appropriated $10,000 and city furnishes balance. Boulevard, two miles long, 40 ft. wide, will be built of best grade of bitulithic and will be finest in this section of state.

**Nashville, Tenn.**—Bids for purchase of $695,000 of serial 5 per cent. bonds to be issued under abutting property tax provisions of city charter will be received by Board of City Commissioners up to noon, March 10. These bonds will be issued under two ordinances, one providing for issuance of $400,000 of bonds for paying abutting property owners' share of expense of improvements and $295,000 for paying city's part of the expense.

**Austin, Tex.**—Attorney-General's department has approved issue of $250,000 Galveston County and improvement bonds.

**Belton, Tex.**—Petition has been presented to County Commissioners asking for election in Good Roads Precinct No. 8 on question of issuing bonds in sum of $300,000 for improvement of roads in Rogers territory.

**Belton, Tex.**—Commissioners' Court has ordered for March 20 election to vote on question of bond issue for $30,000, in good roads Precinct No. 8, which includes Rogers territory. This will practically cover all territory in county that is not already covered by good roads bonds.

**Belton, Tex.**—All bids for construction of good roads in Bartlett road district, which has bond issue of $50,000 available for purpose, have been rejected, and new bids called for on new plans and specifications to be prepared by County Engineer W. E. Dozier. New bids will be opened at Belton on Feb. 20.

**Dallas, Tex.**—Bond issue of $1,325,000 will be sold, bids to be opened on Feb. 25.

**Fort Worth, Tex.**—County Commissioners have approved plans of engineer for graveling another quarter of a mile of Arlington-Webb road and Auditor has been instructed to advertise for bids. Plans and specifications for resurfacing about two miles of road in Precinct 1 have been approved and engineer ordered to advertise for bids on same.

**Hillsboro, Tex.**—Issue of $250,000 of good road bonds for Justice Precinct No. 1 has been sold by County Commissioners to Colonial Trust Co., of Hillsboro, and others.

**Houston, Tex.**—At meeting of citizens' committee which was appointed to advise County Commissioners on roads to be improved with proceeds of $1,000,000 road bond issue a supplemental petition on improvement of Main St. extension boulevard to Rice Institute was presented. Petitioners propose to pay $30,000 toward improvement of extension providing the county will pay $130,000.

**Marshall, Tex.**—Bond issue of $300,000 for good roads will be voted on Feb. 24.

**San Antonio, Tex.**—First actual steps toward improvements under $1,000,000 Bexar County bond issue have been made when Terrell Bartlett, consulting engineer to county, was given authority to advertise for bids for Portland cement, to be used in building of concrete bridges. At his own request Mr. Bartlett was given authority by County Commissioners to ask for bids for cement to cost from $35,000 to $50,000.

**Sulphur Springs, Tex.**—Sum of $50,000 has been voted for paving, material not decided.

**Temple, Tex.**—The citizens' committee, through its chairman, E. F. Lanham, is ready to figure with competent engineer, who will have charge of locating and building system of highways in road improvement district No. 5 with proceeds of $600,000 bond issue recently voted.

**Waco, Tex.**—With 188 votes more than necessary two-thirds majority, voters in Justice Precincts 1 and 3 of McLennan County, including city of Waco and seventeen precincts in country, have decided to issue bonds in sum of $1,075,000 for good roads. Precincts 1 and 3 comprise about 300 square miles. They will constitute road district No. 2 of McLennan County.

**Waco, Tex.**—See Miscellaneous.

**Ogden, Utah.**—It is said that earliest contract for city improvements will be paving of 25th St., from Washington to Wall Ave., and Wall Ave., from 25th to 24th Sts., to be done during summer months.

**Norfolk, Va.**—Authority for issue of $250,000 bonds by Norfolk County for improvement of public highways is contained in bill introduced in House of Delegates.

**Richmond, Va.**—Administrative Board has passed resolution calling for bids on sidewalk, grading, smooth paving of streets and other street improvements,

which will call for outlay of between $225,000 and $250,000. Work will be done in all parts of city irrespective of ward lines. Broad St. will be smooth paved from Third to Jefferson St. All bids must be before Board by February 27, at which time contracts will be awarded, if bids meet approval of Board.

**Chehalis, Wash.**—City Commission has passed ordinances for extensive paving improvements on west side of city.

**Chehalis, Wash.**—Lewis County Commissioners plan to begin to surface 2¼ miles of the National Park highway between Dryad and Ceres, in neighborhood of Meskill, just as early as weather conditions will allow. Board has approved specifications for paving a mile of county road between Chehalis and Centralia, leading from latter city toward Chehalis.

**Olympia, Wash.**—State Highway Board will let four contracts for sections of road in Snoqualmie Pass. Road will be 24 miles long,, and it is estimated will cost $250,000. It extends from Lake Keechelus, four miles east of summit of pass, to a point more than 20 miles west of summit.

**Seattle, Wash.**—Resolutions have been adopted for paving of various streets.

**Tacoma, Wash.**—Road from South prairie to Connel's prairie will be put in first class shape immediately, according to statement made by County Engineer Thompson. Another road to be worked within near future is Dana Road, two miles northeast of Gig Harbor. Petition has been received for county road to run one mile east of intersection of Snellstrom-Bush road. This proposed road is near Graham and will bisect section 17. Survey will be made for this road within next week. Nyberg Road on McNeils Island will also be regraded without delay.

### CONTRACTS AWARDED.

**Hemet, Cal.**—For paving with decomposed granite 406,400 sq. ft. and 3,738 ft. iron culvert and 3,411 ft. curb, to Frank Oswald, O. T. Johnson Bldg., Los Angeles, at $40,466.

**Los Angeles, Cal.**—For paving with asphalt Oxford Ave., to Brashear-Burns Constr. Co., at $7,303, and for paving with asphalt on Glendale and Lake Shore Aves., to Fairchild-Gilmore-Wilton Co., of Los Angeles, at $48,519. Quantities required, 174,834 sq. ft. asphalt pavement, 22,573 sq. ft. sidewalks, storm drains and culverts, 13,117 sq. ft. vitrified block gutter.

**Santa Ana, Cal.**—For paving with asphalt Birch St., to W. N. Crandall Constr. Co., 705 San Fernando Bldg., Los Angeles, at about $20,000.

**Columbus, Ga.**—To Phenix City Paving and Construction Co. has been given contract for paving of sidewalk on 4th Av., Phenix City.

**Cordale, Ga.**—For paving with asphalt, by Bond Commission to West Constr. Co., of Chattanooga, Tenn., at $74,000.

**Logansport. Ind.**—To Bell & Barnard, city, at $27,829, for constructing Prince William Road in Carroll County.

**Richmond, Ind.**—To Schneider Bros., contract for construction of walks on North D St. for 12½ cts. a sq. ft., engineer's estimate. Dan Burkhardt received contract for construction of all crosswalks, bidding 17 cts. for vitrified brick walks and 14 cts. for cement walks.

**Monticello, Ia.**—For approximately 7,300 sq. yds. paving, 4,500 lin. ft. combined curb and gutter, etc., to F. K. Hahn, Cedar Rapids. C. J. Northrop is City Clk.

**Winfield, Kan.**—For 32,000 sq. yds. paving to Elliott & Vance, of Parsons, for standard brick block on 5-in. concrete base $1.82 per sq. yr. W. C. Hail is City Clk.

**Lafayette, La.**—For construction of 15 miles of cement sidewalks by City Council to Aberdeen Cement Co., of Aberdeen, Miss., at $73,770.

**Detroit, Mich.**—By Wayne County Commissioners, to R. D. Baker & Co. of Detroit, for armored joints for year 1914.

**Joplin, Mo.**—To Ozark Paving Co., 2002 Jackson St., city, at $1.89½ per sq. yd., for construction of 7 blocks of asphaltic concrete on Broadway.

**Oswego, N. Y.**—The West River road approach, which extends from Ellen St. and connects with state highway at city line, will be built this year by State Highway Department. Contract was awarded to J. A. Culkin & Co., of this city. The proposed road is a mile long. The company's bid was $18,500. The Culkin Co. also received contract for building five-mile stretch of state highway near Medina for $80,000. Robert M. Barnett, also an Oswego contractor, was awarded a $40,000 road job near Auburn, in town of Owasco.

**Jacksonville, Ore.**—For construction of 13 miles of Pacific highway in Jackson County, to J. W. Sweeny Construction Co., Lewis Building, Portland, Ore., at $107,534.

**Britton, S. D.**—By State Engr. for constructing highway 8 miles east of Britton and continuing for 13 miles across old military reservation, to Frank Puntine, of Langford, at 19 cts. per sq. ft.

**Chattanooga, Tenn.**—For paving of Main Ave., in North Chattanooga, with asphalt by Hamilton County Road Comn. to McIsaac & Gentry at $23,396.

**Chattanooga, Tenn.**—For paving Harrison Ave. to Key-Arnold Constr. Co., its bid, being lowest, $9,963.25.

**Belton, Tex.**—The Bell County Commissioners have awarded contract for building ten miles of good roads in Heidenheimer-Burgess road district to W. J. Montgomery, of San Antonio, whose bid was $30,000, and contractor takes in payment bond issue of $30,000 voted therefor at par and accrued interest.

**Corsicana, Tex.**—Contract for paving certain streets in Corsicana has been let to General Construction Co. of Fort Worth. Entire cost of paving will be something more than $52,000. Material to be used is vitrified, vertical fibre brick, with asphalt filling on cement foundation.

## SEWERAGE

**Gadsden, Ala.**—Plans for election to be held within next 40 days on question of issuing $30,000 bonds for sewer extensions are being made by Council.

**Orange, Cal.**—Petition for construction of sewer on North Cleveland St. has been granted and city engineer and attorney instructed to prepare plans and specifications for sewer on Cleveland St., between Chapman and Palm Aves.

**Stockton, Cal.**—Resolution has been adopted for construction of 8-in. vitrified clay pipe sewer in Acacia St. G. W. Langford is Supt. of Streets.

**Mount Rainier, D. C.**—This municipality plans, within next year, to have modern sewerage and water systems, and possibly own its own electric lighting plant. System contemplates 8½ miles of sewer pipe. Cost of system complete, including disposal plant, sewage lift, etc., should not exceed $48,150.

**Port Tampa City, Fla.**—Election will be held for voting on bond issue of $17,000 for sewer work, paving and water softening plant.

**Tampa, Fla.**—Contracts for construction of Imhoff sewerage system for Tampa, aggregating $660,945.13, have been awarded by Board of Public Works.

**Huntington, Ind.**—Board of Public Works has granted petitions for sewers on Cherry, Oak and Poplar Sts. City engineer has been ordered to draw up plans for proposed improvements.

**Peru, Ind.**—Plans and specifications for sewers in various streets have been approved.

**Shreveport, La.**—City Commissioners have decided to present to taxpayers question of voting $1,000,000 worth of bonds for purpose of acquiring or building system of water works and sewerage to serve entire city.

**Rockville, Md.**—Bill is being considered providing for $50,000 bond issue for sewerage system for Kensington.

**Rockville, Md.**—Establishment of sewerage system is being discussed.

**Pittsfield, Mass.**—Board of public works has voted to recommend to city government that drain and sewer on East and First Sts., to cost about $4,000, be constructed.

**St. Joseph, Mo.**—Ordinances have been approved for construction of sewers in various streets. J. E. Gates is City Clerk.

**Camden, N. J.**—Through representations of Mayor Ellis, Street Commissioner Sayrs and City Engineer Farnham, of Camden, State Board of Health has given Camden until June 15 in which to submit comprehensive plans for construction of sewage disposal plant so that city will no longer pollute Delaware. It has also been agreed that Council at its meeting on Feb. 26 will provide for employment of expert engineer to assist Mr. Farnham in such plans.

**East Orange, N. J.**—Ordinance is being considered providing for bond issue for constructing surface water drains in city. Lincoln E. Rowley is City Clerk.

**Perth Amboy. N. J.**—Ordinances have been passed for construction of various sewers.

**Perth Amboy, N. J.**—Ordinance has been passed for laying of 12-in. pipe sewer in Chapman Ave. W. La Roe is City Clerk.

**Trenton, N. J.**—Engineer of Sewers and Water Gregor is preparing plans for large drain which is to be constructed in Wilbur and Villa Park sections of city. Improvement, petitioned for by residents in those sections of city, will cost something like $110,000. Bond issue will be necessary to pay for the drain. Estimates will probably be advertised for within a few weeks and the contracts will likely be let in five or six sections in order to facilitate the work and insure its speedy completion.

**Mt. Morris, N. Y.**—Proposition that sewer and water pipes be laid on Chapel St. will be voted on February 24.

**Newfane, N. Y.**—Establishment of drainage and sewage system for central portion of village is being planned.

**Oswego, N. Y.**—Common Council has unanimously approved of bond issue to extend improved sewer system under special appropriation of $200,000.

**Watertown, N. Y.**—Special election will be held on February 24 for voting on construction of trunk sewer to relieve Academy, Arlington and Boyd St. sewers and to repair present sewers. F. W. Streeter is City Clerk.

**Forest City, N. C.**—Aldermen of Forest City have entered into contract with J. B. McCrary Company of Atlanta, Ga., to make survey of town and prepare map and estimate cost for installment of sanitary sewerage and water extension.

**Dayton, O.**—Harrison H. Eddy of Boston, the noted expert on sewage disposal, will have conference with City Manager Waite relative to estimated cost of necessary preliminary survey and establishment of sewage disposal plant in this city.

**Urbana, O.**—Sealed bids will be received at the office of city auditor until 12 o'clock, noon, of Monday, Mar. 2, for purchase of bonds of aggregate sum of $48,000, dated April 1, 1914, for construction of sewage disposal works. H. M. Crow is City Auditor.

**Washington, O.**—Resolution declaring it necessary to construct, maintain and operate main sanitary sewer No. 7, in sub-district No. 1, of Lucas County, O., main sewer district No. 2, has been adopted.

**Erie, Pa.**—City Engineer Briggs has recommended construction of storm water sewers and building of sewage experimental treating station.

**Erie, Pa.**—Chain of storm water sewers in Poplar, Plum, Cascade, Raspberry and Nineteenth Sts., to relieve sanitary sewers during periods of rain, are planned by Director Eichhorn, and about $20,000 will be required for work, City Engineer Briggs has estimated.

**Hazleton, Pa.**—Installation of sewage disposal plant is being discussed.

**Greer, S. C.**—Installation of sewerage system is being planned.

**Austin, Tex.**—Attorney General's department has approved of issue of $35,000 Pecos City sewerage bonds.

**Dallas, Tex.**—R. R. Nelms, Waterworks and Sewer Commissioner of city of Dallas, has approved plans for laying sanitary sewer extensions in Leonard, Juliette and Flora Sts. He has also approved plans for sewer connections in Peabody, between Kimball and Bexar. There will be about twenty houses served.

**El Paso, Tex.**—Bond issue of $100,000 for sewer extension has been carried.

**Waco, Tex.**—See Miscellaneous.

**Ashland, Va.**—Election will be held February 26 on question of whether town shall issue $40,000 worth of bonds for purchase and maintenance of sewer and water system.

**Chehalis, Wash.**—City Commission is laying plans for $30,000 trunk sewer from State St. on Prindle St. west to river, which will be large enough to accommodate all sewage of city. It is expected to install same the coming summer.

**Seattle, Wash.**—Resolutions have been adopted for construction of various sewers.

### CONTRACTS AWARDED.

**Rensselaer, Ind.**—For construction of six miles of stone road in Walker Township, to Charles Kain, Medaryville, at $16,574.

**Salem, Ind.**—For construction of road in Washington Township, to George M. Albertson, Orleans, at $20,609.

**Lamoni, Ia.**—To Arthur A. Dobson Co., at $23,014, for constructing 23,500 ft. 8-in. sewer, average cut 5 to 14 ft., and